National Institute of Allergy and Infectious Diseases

PROFILE

Fiscal Year 1984

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health

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Preface

The purpose of this "Profile" is to provide a guide to the NIAID and to describe the objectives of the Institute and the programs we have initiated to achieve our goals in the diagnosis, treatment, and prevention of infectious diseases, and asthma and other allergic and immunologic diseases.

To achieve these goals, we must maintain a vigorous free-ranging research program. This type of research is the work of the scientists supported by research grants throughout the country, as well as the scientists in the intramural program. At the same time we must be alert to the special opportunities to apply basic knowledge to practical problems. This requires careful selection of targeted objectives. One of our major responsibilities, for example, is developmental research on new vaccines and antiviral drugs supported in large part by contracts.

We have included in this "Profile" information on the organization of the Institute and tabular data on the extramural grant program, as well as the training program. I hope that this "Profile" will be useful to the staff of the NIH, and the Department, HHS, as well as other branches of the Government.

Richard M. Krause, M.D.
Director, National Institute of Allergy and Infectious Diseases

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Office of the Director—OD	Tel. No.
Director—Dr. Richard M. Krause—Building 31, 7A03C	496-2263
Deputy Director—Dr. Bernard Talbot—Building 31, 7A03B	496-9118
Special Assistant to the Director—Dr. Jack Whitescarver—Building 31, 7A04	496-9088
Executive Officer—Michael I. Goldrich—Building 31, 7A05A	496-1521
Equal Employment Opportunity Officer—Frank M. Fountain—Building 31, 7A22	496-1012
Office of Administrative Management—OAM	
Chief—Michael I. Goldrich—Building 31, 7A05A	496-1521
Chief—Administrative Management Section-AMS—Roger E. Pellis—Building 31, 7A11	496-1521
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Chief—Personnel Management Section-PMS—Janie R. Lacy—Building 31, 7A31	496-4634
Chief—Management Analysis Section-MAS—Vincent A. Thomas, Jr.—Building 31, 7A16	496-4846
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Office of Program Planning and Evaluation—OPPE	
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Planning Section—PS	
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Evaluation Section—ES	
Chief—Dr. C. David Wise—Building 31, 7A19	496-6752
Classification Section—CS	
Chief—Lai Tan—Westwood Building, 734	496-5318
Data Control Section—DCS	
Chief—Doris E. Sweet—Westwood Building, 733	496-7013
Office of Recombinant DNA Activities—ORDA	
Chief—Dr. William Gartland—Building 31, 3B10	496-6051
Office of Tropical Medicine and International Research—OTMIR	
Chief—Dr. Karl A. Western—Building 31, 7A23	496-6721
Immunology, Allergic and Immunologic Diseases Program—IAIDP	
Director—Dr. Sheldon G. Cohen—Building 31, 7A52	496-1886
Deputy Director—Dr. Bernard Janicki—Building 31, 7A50	496-1886
Immunopathology Branch	
Chief—Dr. Robert A. Goldstein—Westwood Building, 755	496-7104
Allergy and Clinical Immunology Branch—ACIB	
Chief—Dr. Dorothy Sogn—Westwood Building, 752	496-8973
Immunobiology & Immunochemistry Branch—IIB	
Chief—Vacant	496-7551
Genetics and Transplantation Biology Branch—GTBB	
Chief—Dr. Jane Schultz—Westwood Building, 7A05	496-7363

Microbiology and Infectious Diseases Program—MIDP

Director—Dr. William S. Jordan—Building 31, 7A52 496-1884
Special Assistant to Director, MIDP—Dr. Earl Beck—Westwood Building, 749 496-2544
Clinical and Epidemiological Studies Branch—CESB
Chief—Dr. Robert Edelman—Building 31, 7A49 496-5893
Epidemiology and Biometry Section—EBS
Chief—Dr. Richard Kaslow—Westwood Building, 739 496-7067
Development & Applications Branch—DAB
Chief—Vacant 496-7051
Bacteriology & Virology Branch—BVB
Chief—Dr. Milton Puziss—Westwood Building, 738 496-7728
Molecular Microbiology & Parasitology Branch—MMPB
Chief—Dr. Irving Delappe—Westwood Building, 737 496-7114

Extramural Activities Program—EAP

Director—Dr. John W. Diggs—Westwood Building, 703 496-7291
Deputy Director—Dr. Luz A. Froehlich—Westwood Building, 703 496-7688
Council Assistant—Margery Grubb—Westwood Building, 705 496-7601
Research Resources Section—RRS
Chief—Sylvia Cunningham—Westwood Building, 7A03 496-7036
Program and Project Review Branch—PPRB
Chief—Dr. Luz A. Froehlich—Westwood Building, 703 496-7688
Executive Secretary, Microbiology & Infectious Diseases Advisory Committee—Dr. Mohammed S. Quaraishi—Westwood Building, 706 496-7465
Executive Secretary, Allergy & Clinical Immunology Research Committee, Transplantation Biology & Immunology Committee—Dr. Nirmal K. Das—Westwood Building, 706 496-7966
Contract Management Branch—CMB
Chief—Lewis S. Pollack—Westwood Building, 707 496-7116
Grants Management Branch—GMB
Chief—Gary Thompson—Westwood Building, 707 496-7231
Microbiology Grants Management Section
Chief—Todd Ball—Westwood Building, 707 496-7075
Immunology Grants Management Section
Chief—Mattie Tynan—Westwood Building, 710 496-7075
Grants Support Section
Chief—Marietta Robinson—Westwood Building, 718 496-7075

Research Manpower Development Staff

Chief—Dr. William Bennett—Westwood Building, 7A03 496-5030

Intramural Research Program—IRP

Director—Dr. Kenneth W. Sell—Building 10, 11C103 496-3006
Associate Director—Dr. James C. Hill—Building 10, 11C101 496-3207
Clinical Director—Dr. Michael M. Frank—Building 10, 11N228 496-5807
Deputy Clinical Director—Dr. Anthony S. Fauci—Building 10, 11B13 496-1124
Special Assistant to the Director—Dr. Katherine Cook Jaouni—Building 5, 114 496-1409
Special Assistant for Biometry—Dr. David Alling—Building 10, 11N118 496-1251
Special Assistant for Animal Care—Dr. Pete Golway—Building 14B, 228 496-6395
Administrative Officer—Charles E. Criswell—Building 10, 11C101 496-3207
Laboratory of Biology of Viruses—LBV
Chief—Dr. Norman P. Salzman—Building 5, 324 496-3215
Biochemical Virology Section
Chief—Dr. Norman P. Salzman—Building 5, 324 496-3215
Molecular Structure Section
Chief—Dr. James A. Rose—Building 5, 309 496-2119
Laboratory of Clinical Investigation—LCI
Chief—Dr. Michael M. Frank—Building 10, 11N228 496-5807
Allergic Diseases Section
Chief—Dr. Michael A. Kaliner—Building 10, 11C205 496-9314
Bacterial Diseases Section
Chief—Dr. John I. Gallin—Building 10, 11N114 496-1343
Clinical Immunology Section
Chief—Dr. Michael M. Frank—Building 10, 11N228 496-5807
Clinical Mycology Section
Chief—Dr. John E. Bennett—Building 10, 11N210 496-3461

Clinical Parasitology Section
Chief—Dr. Eric A. Ottesen—Building 10, 11C108 496-5398
Medical Virology Section
Chief—Dr. Stephen Straus—Building 10, 11N113 496-5221
Mucosal Immunity Section
Chief—Dr. Warren Stroeber—Building 10, 11A250 496-9662
Laboratory of Immunology—LI
Chief—Dr. William E. Paul—Building 10, 11N311 496-5046
Laboratory of Immunoregulation—LIR
Chief—Dr. Anthony S. Fauci—Building 10, 11B13 496-1124
Laboratory of Infectious Diseases—LID
Chief—Dr. Robert M. Chanock—Building 7, 100 496-2024
Assistant Chief—Dr. Albert Z. Kapikian—Building 7, 103 496-3371
Epidemiology Section
Chief—Dr. Albert Z. Kapikian—Building 7, 103 496-3371
Hepatitis Virus Section
Chief—Dr. Robert Purcell—Building 7, 202 496-6227
Respiratory Viruses Section
Chief—Dr. Robert M. Chanock—Building 7, 100 496-2024
Laboratory of Molecular Microbiology—LMM
Chief—Dr. Malcolm Martin—Building 5, B125 496-4012
Bacterial Virulence Section
Acting Chief—Dr. Donald LeBlanc—Building 550, 224—Ft. Detrick, MD 8-935-1192
Biochemical Virology Section
Chief—Dr. Malcolm Martin—Building 5, 329 496-4012
Viral Biology Section
Chief—Dr. Kenneth Takemoto—Building 5, B126 496-3540
Mycoplasma Section
Chief—Dr. Joseph Tully—Building 550, 104—Ft. Detrick, MD 8-935-1192
Laboratory of Microbial Immunity—LMI
Chief—Dr. Richard Asofsky—Building 5, 235 496-6400
Experimental Autoimmunity Section
Chief—Dr. Sanford H. Stone—Building 5, 224 496-2605
Experimental Pathology Section
Chief—Dr. Richard Asofsky—Building 5, 235 496-6400
Microbiology and Immunology Section
Chief—Dr. Philip J. Baker—Building 5, 229 496-1220
Laboratory of Parasitic Diseases—LPD
Chief—Dr. Franklin A. Neva—Building 5, 114 496-2486
Assistant Chief—Dr. Allen W. Cheever—Building 5, 104 496-3487
Immunology and Cell Biology Section
Chief—Dr. E. A. Sher—Building 5, 212 496-3535
Host—Parasitic Relations Section
Chief—Dr. Allen W. Cheever—Building 5, 104 496-3487
Malaria Section
Chief—Dr. Louis H. Miller—Building 5, 124 496-2183
Parasitic Growth and Differentiation Section
Chief—Dr. Louis S. Diamond—Building 5, 211 496-4740
Physiology and Biochemistry Section
Chief—Dr. Eugene C. Weinbach—Building 5, 329 496-3280
Laboratory of Viral Diseases—LVD
Chief—Dr. Bernard Moss—Building 5, 316 496-9869
Molecular Virology Section
Chief—Dr. Hilton B. Levy—Building 550, 106—Ft. Detrick, MD 8-935-6265
Viral Oncology Section
Acting Chief—Dr. Janet Hartley—Building 7, 304 496-2613
Macromolecular Biology Section
Chief—Dr. Bernard Moss—Building 5, 316 496-9869
Virology and Cellular Immunology Section
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Laboratory of Persistent Viral Diseases—LPVD
Chief—Dr. Bruce Chesebro—Hamilton, Montana 406-363-3211

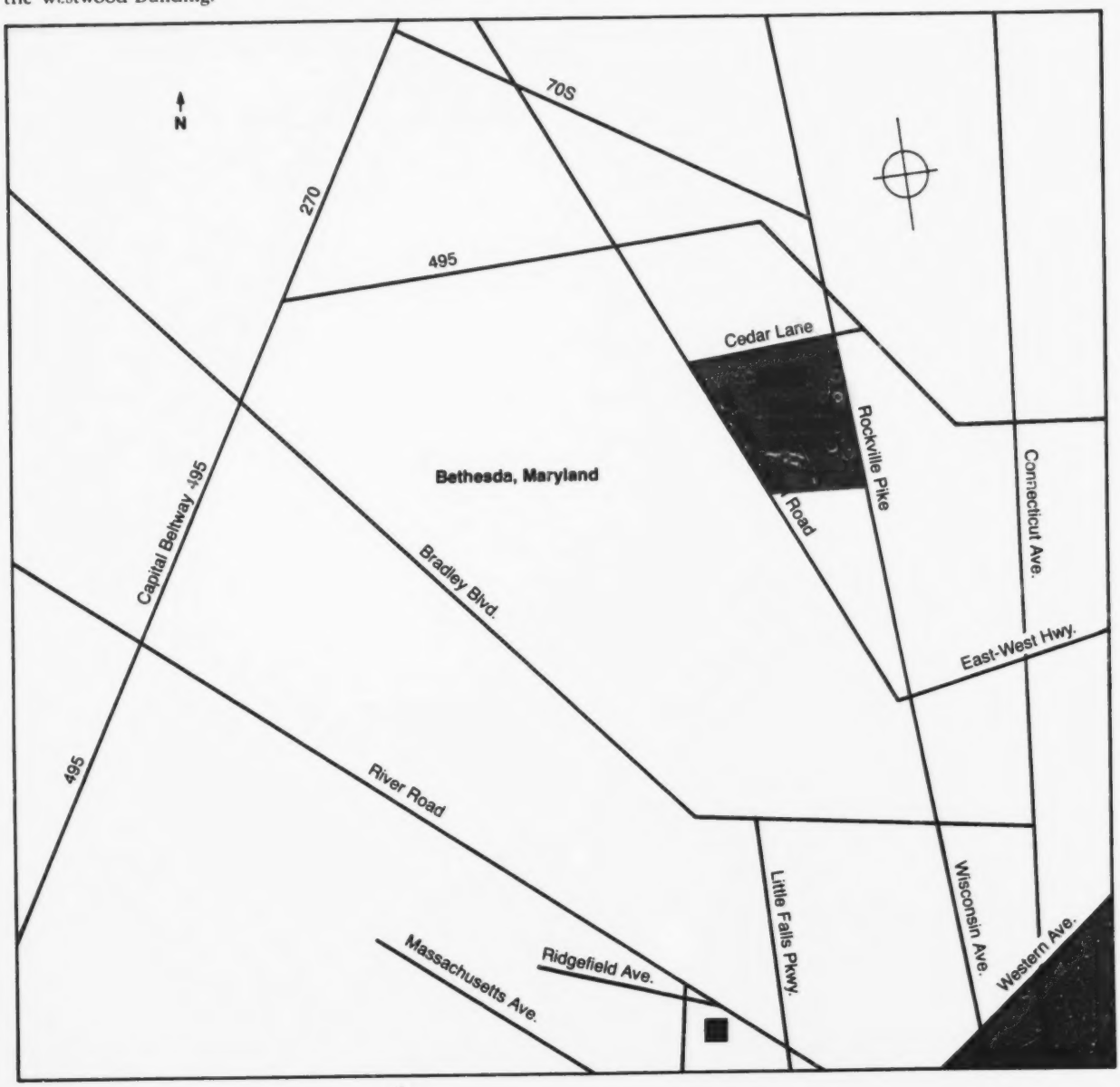
Laboratory of Microbial Structure and Function—LMSF
Chief—Dr. John L. Swanson
Epidemiology Branch—EB
Chief—Vacant—Hamilton, Montana 406-363-3211
Epidemiology Section
Chief—Vacant
Anthropod-Borne Diseases Section
Chief—Dr. Willy Burgdorfer
Histopathology Section
Chief—Dr. William J. Hadlow
Rocky Mountain Operations Branch—RMOB
Chief—Robert W. Steiner—Hamilton, Montana 406-363-3211
Maintenance Section
Chief—Thomas A. Kerr
Animal Care Section
Chief—Bryan M. Hestekin
Electron Microscopy Section
Chief—Dr. Claude Garron
Laboratory of Immunogenetics—LIG
Chief—Dr. Thomas J. Kindt—Building 5, B104 496-9589
Immunogenetics Research Section
Chief—Dr. Thomas J. Kindt—Building 5, B104 496-9589
Immunobiology Section
Chief—Dr. Kenneth W. Sell—Building 10, 11C103 496-3006
Membrane Antigen Structure Section
Chief—Dr. John E. Coligan—Building 5, B134 496-3213

Locations Occupied by NIAID Personnel

On the NIH campus, NIAID personnel are located in Buildings 5, 7, 10, 14 and 31. Additional personnel are located in the Westwood Building.

■ Building 31
NIH Campus
9000 Rockville Pike
Bethesda, Maryland 20205

■ **Westwood Building**
5333 Westbard Avenue
Bethesda, Maryland 20016



NIAID Highlights: Important Events in NIAID History

Mission

The National Institute of Allergy and Infectious Diseases (NIAID) conducts and supports research to better understand the causes of allergic, immunologic, and infectious diseases, and to develop better means of preventing, diagnosing, and treating illnesses.

Encompassed in the Institute mission are studies on the following:

- ☐ The immune system, its genetic control, maturation, characteristics, and manipulation.
- ☐ Disorders and derangements of the immune system including asthma and other allergies, immune deficiency states, and autoimmunity.
- ☐ The role of the immune system in the pathogenesis of chronic diseases, such as arthritis, chronic glomerulonephritis, and lupus erythematosus.
- ☐ The etiology, epidemiology, and pathogenesis of all types of infections (including those caused by viruses, mycoplasma, bacteria, fungi, and parasites) involving a variety of organ systems.
- ☐ The diagnosis, treatment, and prevention of all types of infections including research on antibiotics; antimicrobial, antifungal, and antiviral therapy; antisera; and vaccines.
- ☐ The role and mechanism of nucleic acid recombination in microbial agents, and the manipulation of nucleic acid recombination to produce medically or technologically useful hybrids. Also, the assessment and control of risks of such research.

Important Events in NIAID History

1948—The National Microbiological Institute was established November 1 with Dr. Victor H. Haas as first Director. The Rocky Mountain Laboratory and the Biologics Control Laboratory, both dating to 1902, were incorporated into the new Institute, together with the Division of Infectious Diseases and the Division of Tropical Diseases of the National Institutes of Health (NIH).

1951—An Institute-supported grants program was initiated, and a branch was established to administer research, training, and fellowship grants. Grant applications were reviewed by the National Advisory Health Council until 1956.

1955—The National Microbiological Institute became the National Institute of Allergy and Infectious Diseases on December 29. Dr. Haas remained as Director. The Biologics Control Laboratory was detached from the Institute and expanded to Division status within NIH.

1956—The first meeting of the National Advisory Allergy and Infectious Diseases Council was held March 7-8.

1957—The Laboratory of Immunology was established in January to meet the growing need for research on the mechanisms of allergy and immunology.

Dr. Justin M. Andrews became the Director of NIAID in April.

The Middle America Research Unit was established in the Canal Zone jointly by NIAID and the Walter Reed Army Institute of Research as a temporary field station, made permanent in 1961. Important studies on tropical diseases were conducted there for 15 years. NIAID transferred its portion of the program to the Gorgas Memorial Institute in 1972.

1962—A collaborative research program funded mainly by contracts was established within the Institute to plan, coordinate, and direct nationwide projects on infectious diseases, vaccine development, transplantation immunology, research reagents, and antiviral substances.

1964—Dr. Dorland J. Davis became Director of NIAID upon the retirement of Dr. Justin M. Andrews.

1968—With the dissolution of NIH's Office of International Research (OIR) and creation of the Fogarty International Center on July 1, 1968, programs formerly managed by OIR were transferred to NIAID to be administered by the Geographic Medicine Branch. These included: (1) the U.S.-Japan Cooperative Medical Science Program, initiated in 1965 by the President and the Japanese Prime Minister to explore the health problems of Asia; and (2) the International Centers for Medical Research and Training, a 1960 congressional initiative to advance the status of U.S. health sciences through international research.

1971—The first seven Allergic Disease Centers were established to translate basic concepts of the biomedical sciences into clinical investigations. The centers have subsequently expanded to 16.

1974—The first centers for the study of sexually transmitted diseases and of influenza were established.

1975—Dr. Richard M. Krause became the Director of NIAID in November.

1977—The NIAID Extramural Research Program was reorganized into three areas: Microbiology and Infectious Diseases; Immunology, Allergic and Immunologic Diseases; and Extramural Activities. Centers for gastroenteritis and diarrheal disorders were established, and an intramural Laboratory of Immunogenetics was formed.

1978—The first maximum containment facility (P4) for recombinant DNA research was opened in Frederick, Md. International program project grants and international exploratory/development research grants programs were established. Centers were created for interdisciplinary research on immunologic diseases.

1979—The Office of Recombinant DNA Activities was transferred from the National Institute of General Medical Sciences to NIAID.

The International Collaboration in Infectious Diseases Research Program superseded the International Centers for Medical Research and Training established in 1960.

The Rocky Mountain Laboratory was reorganized into the Laboratory of Persistent Viral Diseases to deal with both host and viral mechanisms leading to slow or persistent viral infections; the Laboratory of Microbial Structure and Function, directed at bacterial diseases, particularly sexually transmitted diseases; and an Epidemiology Branch.

1981—The Laboratory of Immunoregulation was established to provide a means for applying new knowledge in the field of immunology to the clinical diagnosis and treatment of patients with immunological disorders; the Laboratory of Molecular Microbiology was created to exploit new techniques in recombinant DNA methodology and other molecular studies to expand the Institute's interests in both bacterial and viral pathogenesis and virulence.

NIAID Legislative Chronology

November 1, 1948—The National Microbiological Institute was established under authority of section 202 of the Public Health Service Act, as implemented by General Circular No. 55, Organization Order No. 20, dated October 8, 1948.

December 29, 1955—NIAID was established (replacing the National Microbiological Institute) under authority of the Omnibus Medical Research Act (P.L. 81-692, 64 Stat. L. 443) as implemented by PHS Briefing Memorandum of November 4, 1955, from the Surgeon General to the Secretary of Health, Education, and Welfare.

NIAID Directors

Victor H. Haas, M.D.

(November 1948-April 1957)

Dr. Victor H. Haas was born in Cincinnati, Ohio, on January 6, 1909. He received a B.S. degree in 1929, a B.M. degree in 1931, and an M.D. in 1932, all from the University of Cincinnati.

After joining the Commissioned Corps of PHS in 1932, he conducted investigations of encephalitis in St. Louis in 1933, spent the following year at NIH, and from 1935 to 1939 served at the PHS Plague Laboratory in San Francisco.

During World War II, Dr. Haas was detailed as chief of the Medical Commission to the Yunnan-Burma Railway in China and staff officer in the China-Burma-India Theater. He served as the officer in charge of PHS malaria investigations from 1943 to 1948.

He was appointed Director of the National Microbiological Institute (later renamed NIAID) on November 1, 1948, and continued in that post until April 1957. He retired from PHS on January 1, 1961.

Justin M. Andrews, Ph.D., Sc.D.

(April 1957-October 1964)

Dr. Justin M. Andrews was born in Providence, R.I., on August 28, 1902. He received a Ph.D. degree, cum laude, from Brown University in 1923, and an Sc.D. degree in 1926 and honorary LL.D. in 1951 from Johns Hopkins University.

Dr. Andrews was progressively an instructor, assistant professor, and associate professor of protozoology at Johns Hopkins School of Hygiene and Public Health from 1926 to 1938, except for 1930-31, when he served as visiting professor of parasitology at the University of the Philippines in Manila. He became a special member of the Rockefeller Foundation in 1929.

From 1938 to 1942, he was director of the division of malaria and hookworm service of the Georgia Department of Public Health in Atlanta. He was commissioned in PHS in 1941, and at the outbreak of World War II, he joined the Sanitary Corps of the U.S. Army. He was assigned to malaria control activities in the North African, Mediterranean, and Pacific Theaters, and advanced to the rank of colonel.

After the war, Dr. Andrews returned to PHS where he became deputy chief and then chief of the Communicable Disease Center in Atlanta. In 1957, he was assigned to the Washington Office of the Bureau of State Services with the rank of Assistant Surgeon General. He was appointed Director of NIAID in April 1957 and continued in this post until his retirement from PHS on October 1, 1964. He died June 29, 1967.

Dorland J. Davis, M.D., D.P.H.

(October 1964-August 1975)

Dr. Dorland J. Davis was born in Chicago, Ill., on July 2, 1911. He received a B.S. degree from the University of Illinois in 1933, an M.D. from the Johns Hopkins University in 1937, and a D.P.H. degree from Johns Hopkins in 1940.

Dr. Davis became a commissioned officer in PHS in 1939 and was first assigned to the Division of Infectious Diseases, NIH. In 1943, he served in North Africa as a member of a medical team investigating endemic diseases, particularly malaria and typhus.

He returned to the Division of Infectious Diseases and, in 1954, was appointed chief of the Laboratory of Infectious Diseases, National Microbiological Institute (now NIAID). In 1956, he was named associate director in charge of research; in 1962, director of intramural research; and on October 1, 1964, Director.

In August 1968, Dr. Davis was promoted to the rank of Assistant Surgeon General. He retired from PHS on August 1, 1975.

Richard M. Krause, M.D.

(November 1975-Present)

Dr. Richard M. Krause, director, NIAID since November, 1975, is a

physician and scientist who has achieved an international reputation for his work in immunology and microbiology. The persistent theme underlying his research concerns the chemical nature of substances in bacteria that stimulate the body's immune system and genetic factors that influence immunity to microbial substances.

Dr. Krause's studies initially concerned the cause and prevention of streptococcal sore throat and the more serious sequelae, rheumatic fever and glomerulonephritis. In the course of studies on the immune response to the streptococcus, he discovered in 1965 that rabbits and mice injected with certain bacterial antigens will produce a single or homogeneous type of antibody. Since that time, he—and many other investigators in the field—have used this animal model for studying chemical and genetic factors involved in the immune response. Genetic control of the antibody response to bacteria and viruses is important in health and disease, for example, in determining susceptibility or resistance to infection.

Dr. Krause was born in Marietta, Ohio, on January 4, 1925. After education in the Marietta public schools, he received a B.A. degree from Marietta College in 1947 and in 1952 was graduated from Western Reserve University School of Medicine, now Case Western Reserve University. In the course of his medical studies, he participated in epidemiologic research on the prevention of rheumatic fever, an experience which awakened his early research interest in the relationship between infection and immunity.

Following medical school, Dr. Krause took his internship and residency at Barnes Hospital, St. Louis, Missouri. In 1954, he joined the Rockefeller Institute and Hospital (now Rockefeller University) as an assistant physician, and later was promoted to associate professor. In 1962, he assumed professorships in epidemiology and medicine at the Washington University School of Medicine in St. Louis. Four years later, he returned to Rockefeller University. He was a professor and senior physician at Rockefeller, prior to his arrival at NIH.

Long before his appointment to NIAID, Dr. Krause had an active interest in the practical application of research findings to the prevention and control of disease. He identified, for example, the patterns of spread of streptococci in families and communities and was one of the leaders who sparked a renewed interest in the problems of sexually transmitted diseases.

Upon joining the Institute, Dr. Krause became a commissioned officer in the PHS. His current rank is Assistant Surgeon General.

As NIAID director, Dr. Krause has reorganized and streamlined the Institute's major programs to assure that the maximum resources available would be channeled into meritorious research on the cause, treatment, and prevention of disease. His efforts were recognized in 1979 with the DHEW Distinguished Service Medal for outstanding leadership in guiding the complex programs of the Institute and for his contributions to immunology and microbiology.

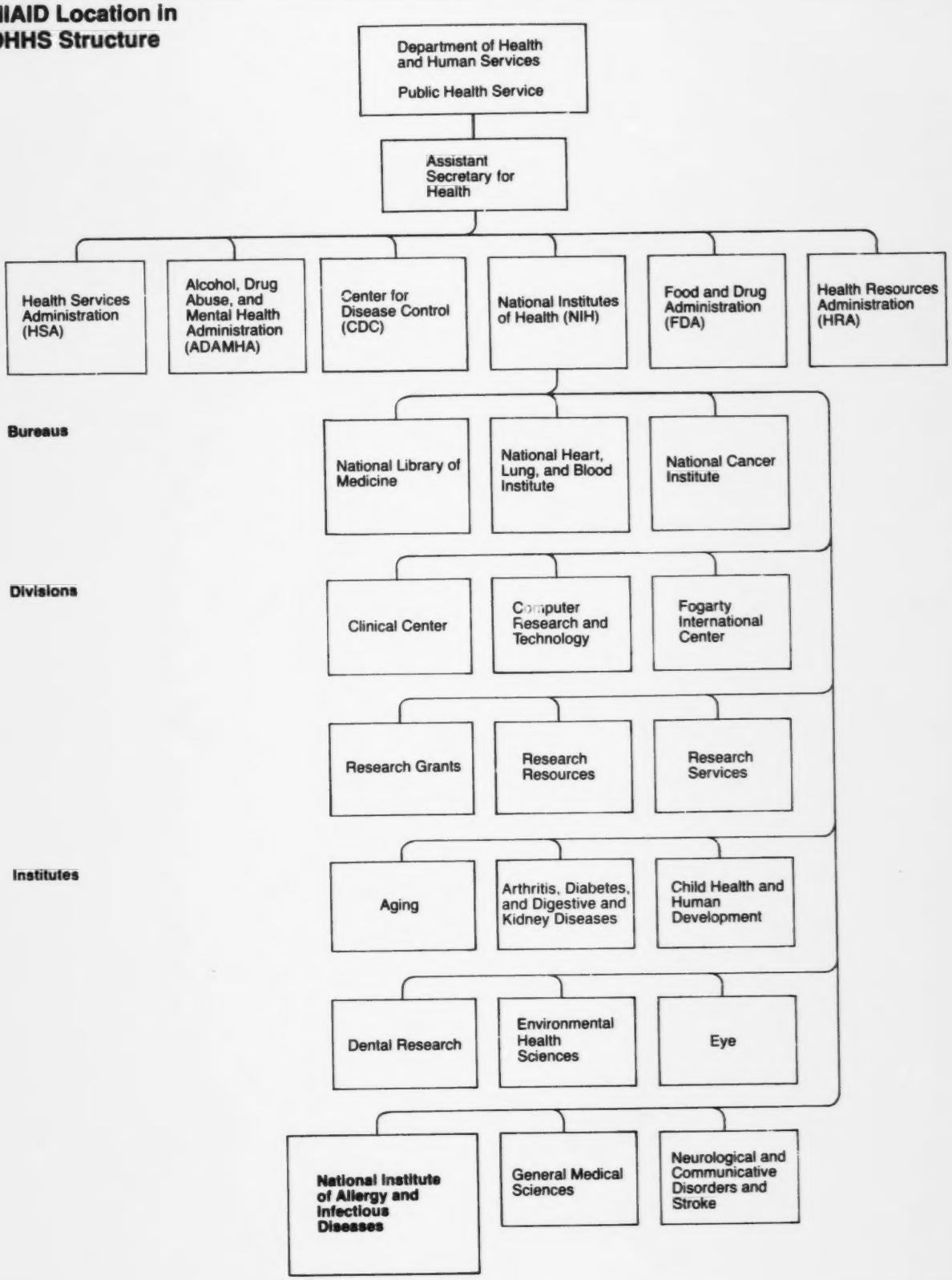
Dr. Krause has served as a consultant and advisor on a broad range of health problems. In the late 1960's and early 1970's, he served first as chairman of the NIH Allergy and Immunology Study Section and then as a member of the NIAID's Infectious Disease Advisory Committee. He has been a consultant to the World Health Organization and to the Surgeon General of the U.S. Army. He also has served on advisory committees and boards of directors of health and scientific associations, including such voluntary health organizations as the Lupus Foundation of America, the Asthma and Allergy Foundation of America, and the American Heart Association.

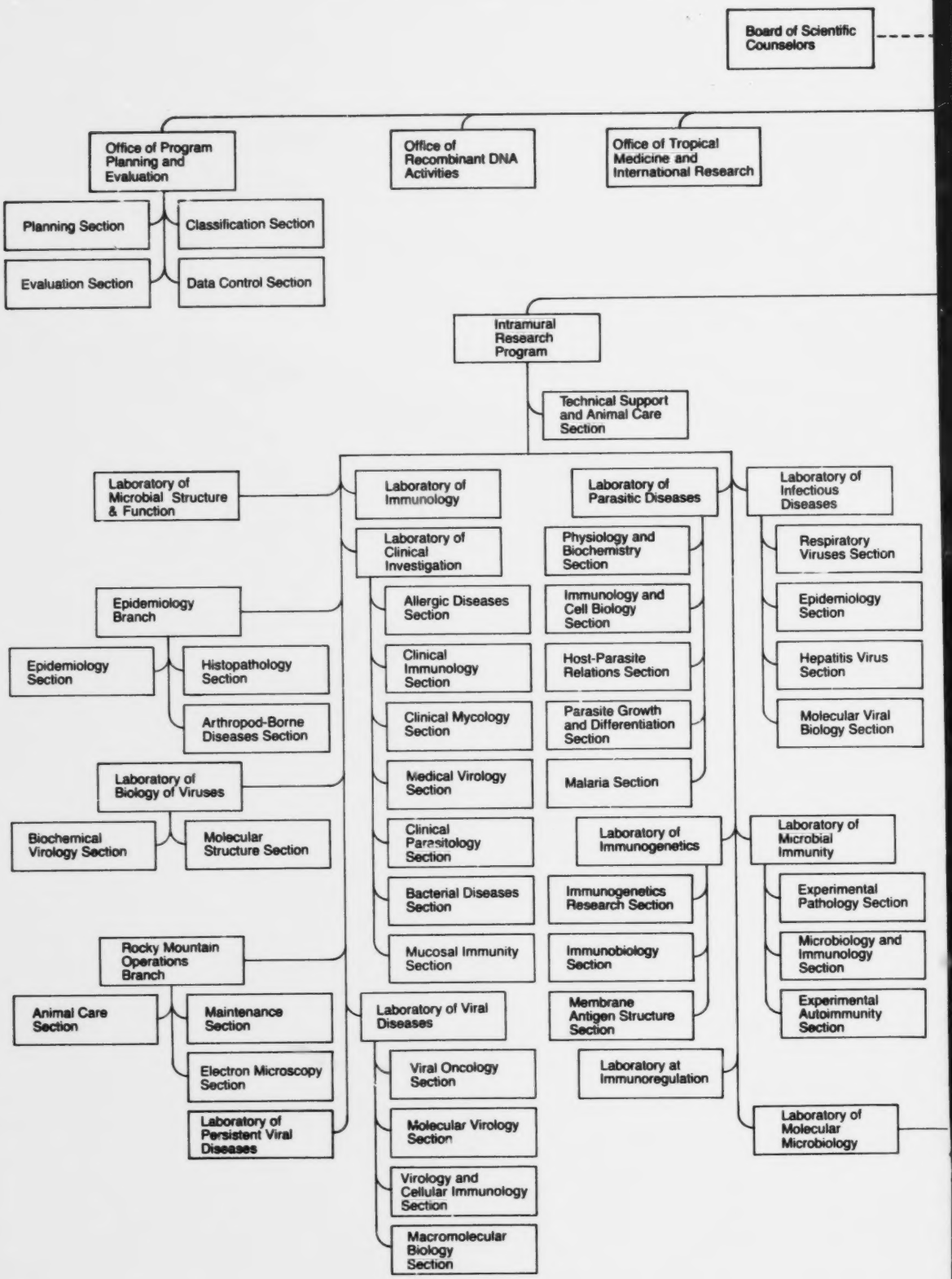
Dr. Krause's achievements have won him many awards and honors, including several honorary doctor of science degrees. The most recent international honor was the Al-Gummharia Award by the Egyptian government for his contributions to the development of health research centers in Egypt. He is a member of numerous professional societies, including the National Academy of Sciences and its Institute of Medicine.

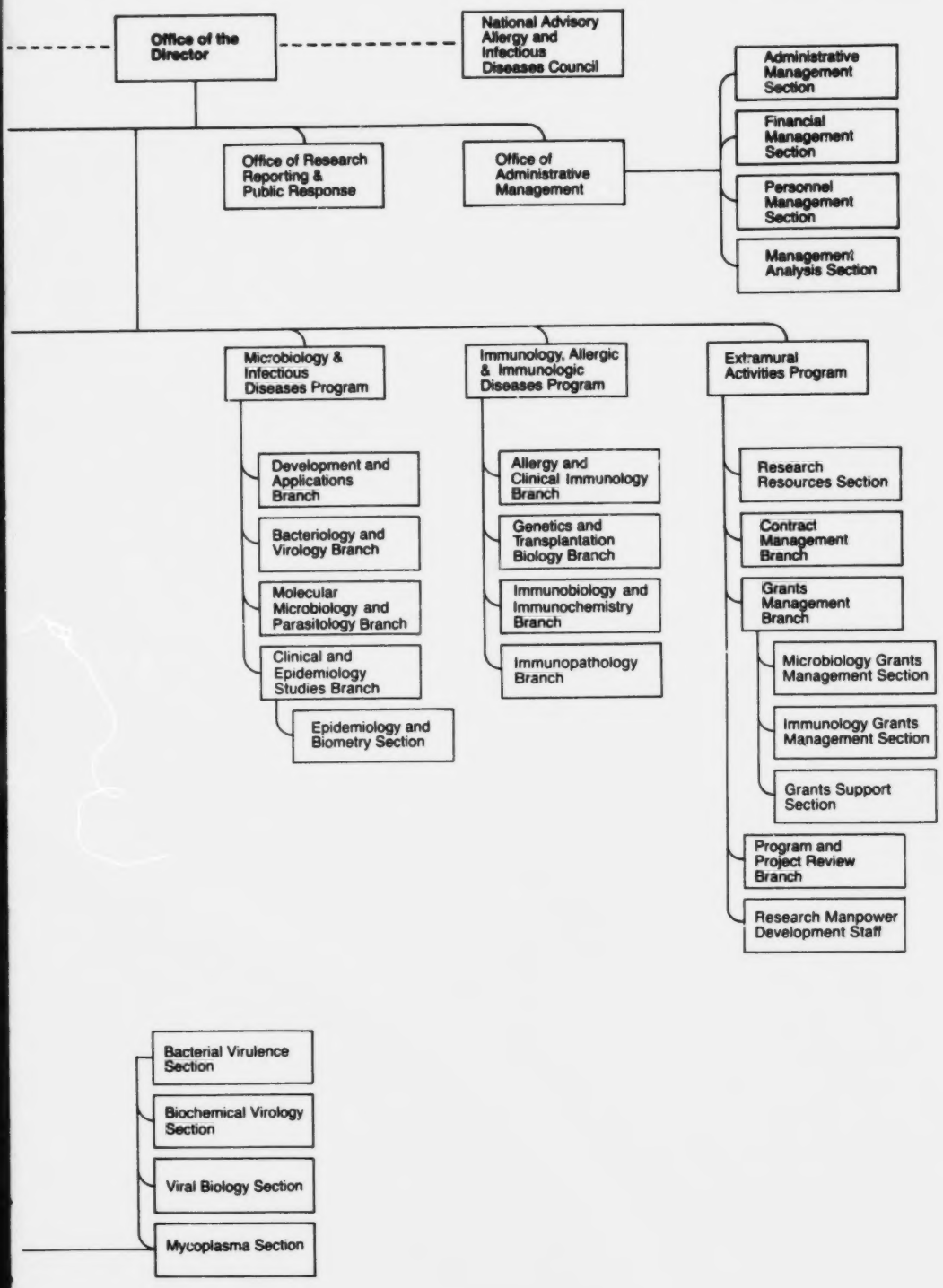
NIAID Organizational Structure

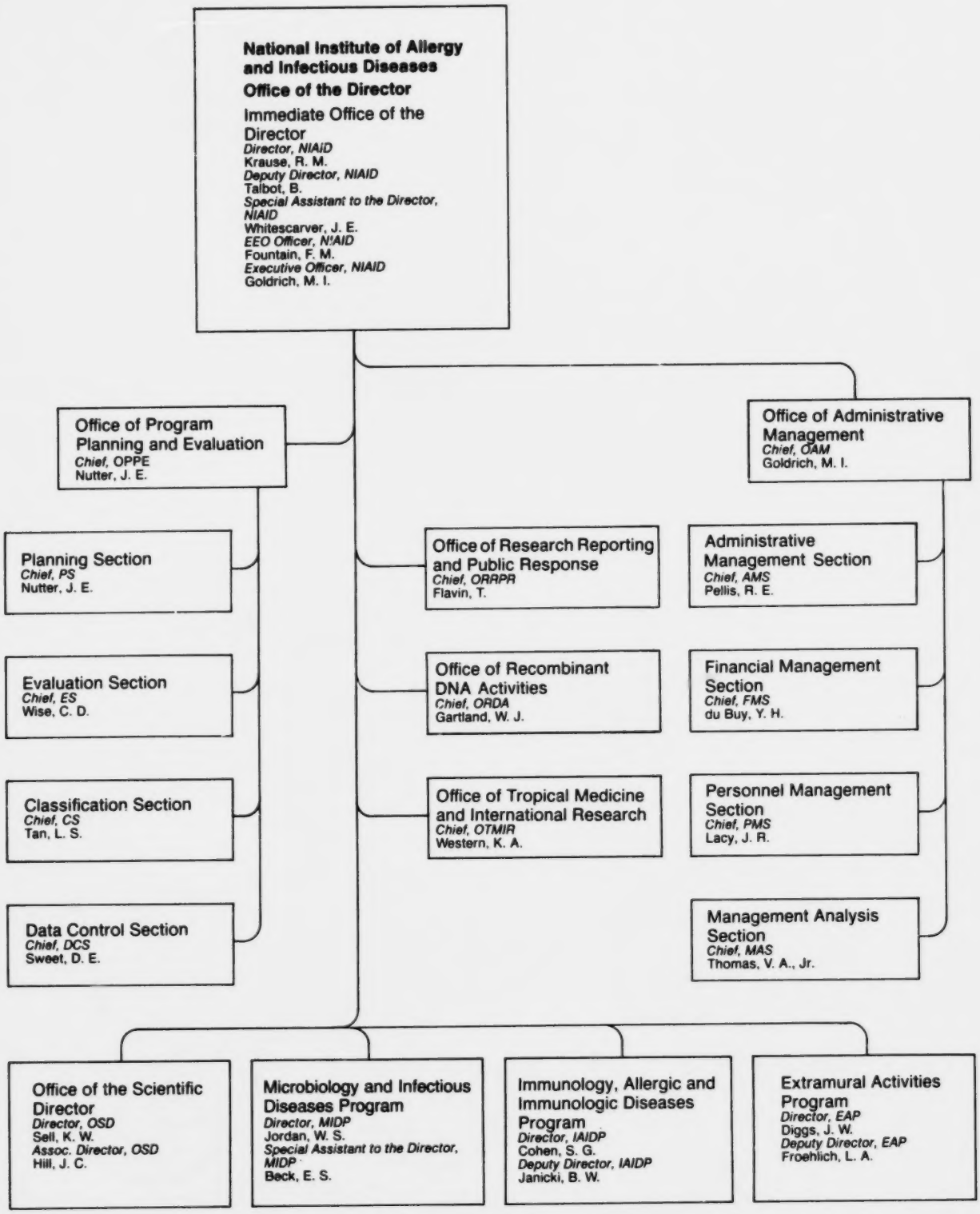
3

NIAID Location in DHHS Structure




Board of Scientific Counselors
Office of Program Planning and Evaluation
Office of Recombinant DNA Activities
Office of Tropical Medicine and International Research
Planning Section
Classification Section
Evaluation Section
Data Control Section
Intramural Research Program
Technical Support and Animal Care Section
Laboratory of Microbial Structure & Function
Laboratory of Immunology
Laboratory of Parasitic Diseases
Laboratory of Infectious Diseases
Laboratory of Clinical Investigation
Physiology and Biochemistry Section
Respiratory Viruses Section
Epidemiology Branch
Allergic Diseases Section
Immunology and Cell Biology Section
Epidemiology Section
Clinical Immunology Section
Host-Parasite Relations Section
Hepatitis Virus Section
Histopathology Section
Clinical Mycology Section
Parasite Growth and Differentiation Section
Molecular Viral Biology Section
Arthropod-Borne Diseases Section
Medical Virology Section
Malaria Section
Laboratory of Biology of Viruses
Clinical Parasitology Section
Laboratory of Immunogenetics
Laboratory of Microbial Immunity
Biochemical Virology Section
Molecular Structure Section
Bacterial Diseases Section
Immunogenetics Research Section
Experimental Pathology Section
Rocky Mountain Operations Branch
Mucosal Immunity Section
Immunobiology Section
Microbiology and Immunology Section
Membrane Antigen Structure Section
Experimental Autoimmunity Section
Animal Care Section
Maintenance Section
Laboratory of Viral Diseases
Laboratory at Immunoregulation
Electron Microscopy Section
Viral Oncology Section
Laboratory of Molecular Microbiology
Laboratory of Persistent Viral Diseases
Molecular Virology Section
Virology and Cellular Immunology Section
Macromolecular Biology Section


Office of the Director
National Advisory Allergy and Infectious Diseases Council
Office of Research Reporting & Public Response
Office of Administrative Management
Administrative Management Section
Financial Management Section
Personnel Management Section
Management Analysis Section
Microbiology & Infectious Diseases Program
Immunology, Allergic & Immunologic Diseases Program
Extramural Activities Program
Development and Applications Branch
Bacteriology and Virology Branch
Molecular Microbiology and Parasitology Branch
Clinical and Epidemiology Studies Branch
Epidemiology and Biometry Section
Allergy and Clinical Immunology Branch
Genetics and Transplantation Biology Branch
Immunobiology and Immunochemistry Branch
Immunopathology Branch
Research Resources Section
Contract Management Branch
Grants Management Branch
Microbiology Grants Management Section
Immunology Grants Management Section
Grants Support Section
Program and Project Review Branch
Research Manpower Development Staff
Bacterial Virulence Section
Biochemical Virology Section
Viral Biology Section
Mycoplasma Section


National Institute of Allergy and Infectious Diseases
Office of the Director
Immediate Office of the Director
Director, NIAID
Krause, R. M.
Deputy Director, NIAID
Talbot, B.
Special Assistant to the Director, NIAID
Whitescarver, J. E.
EEO Officer, NIAID
Fountain, F. M.
Executive Officer, NIAID
Goldrich, M. I.
Office of Program Planning and Evaluation
Chief, OPPE
Nutter, J. E.
Office of Administrative Management
Chief, OAM
Goldrich, M. I.
Planning Section
Chief, PS
Nutter, J. E.
Evaluation Section
Chief, ES
Wise, C. D.
Classification Section
Chief, CS
Tan, L. S.
Data Control Section
Chief, DCS
Sweet, D. E.
Office of Research Reporting and Public Response
Chief, ORRPR
Flavin, T.
Office of Recombinant DNA Activities
Chief, ORDA
Gartland, W. J.
Office of Tropical Medicine and International Research
Chief, OTMIR
Western, K. A.
Administrative Management Section
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Pellis, R. E.
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Lacy, J. R.
Management Analysis Section
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Office of the Scientific Director
Director, OSD
Sell, K. W.
Assoc. Director, OSD
Hill, J. C.
Microbiology and Infectious Diseases Program
Director, MIDP
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Special Assistant to the Director, MIDP
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Immunology, Allergic and Immunologic Diseases Program
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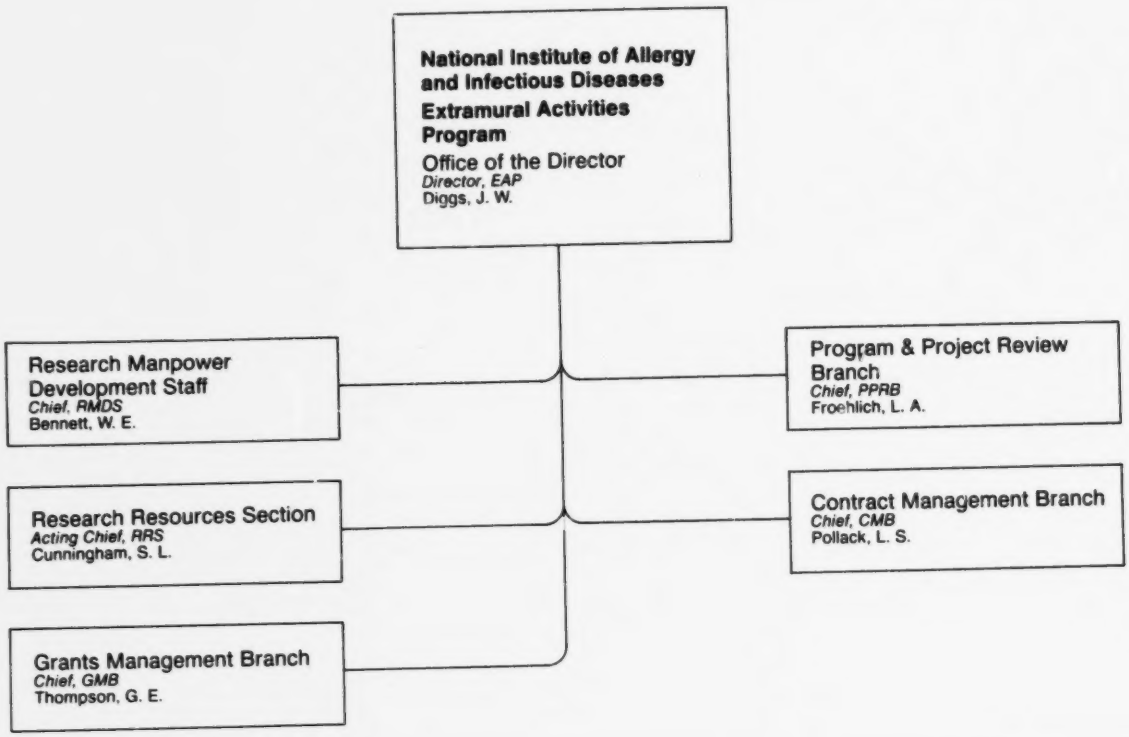
Deputy Director, IAIDP
Janicki, B. W.
Extramural Activities Program
Director, EAP
Diggs, J. W.
Deputy Director, EAP
Froehlich, L. A.


National Institute of Allergy and Infectious Diseases
Extramural Activities Program
Office of the Director
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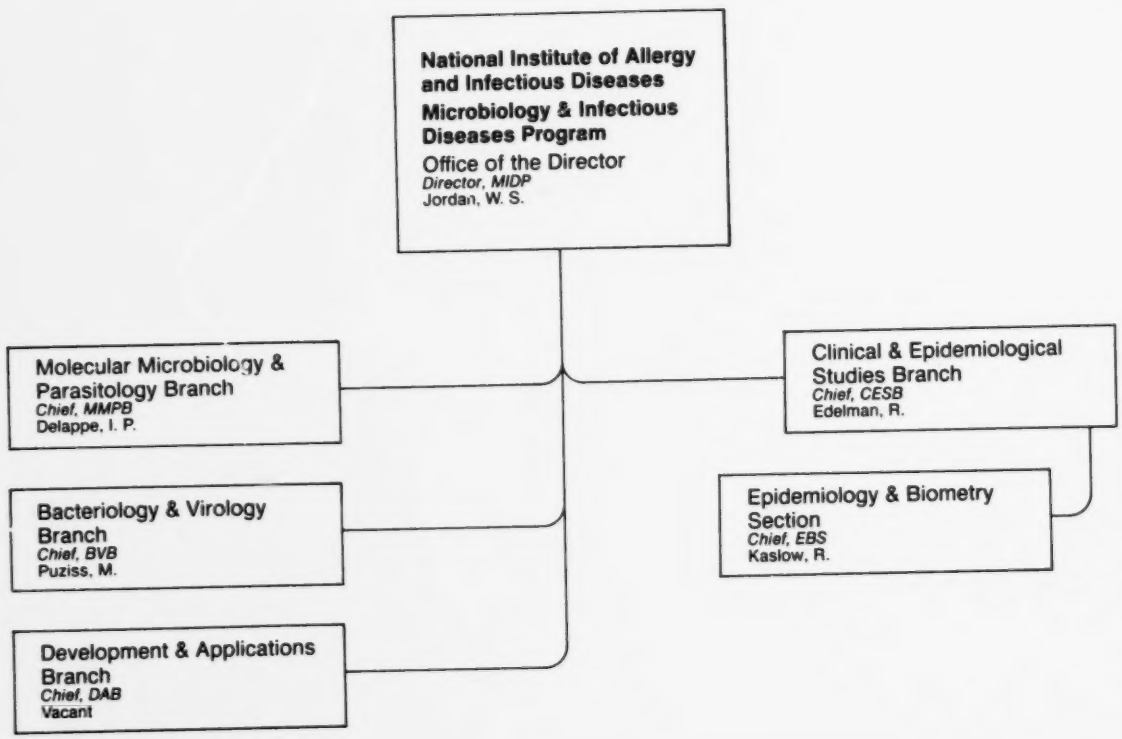
Research Manpower Development Staff
Chief, RMDS
Bennett, W. E.
Research Resources Section
Acting Chief, RRS
Cunningham, S. L.
Grants Management Branch
Chief, GMB
Thompson, G. E.
Program & Project Review Branch
Chief, PPRB
Froehlich, L. A.
Contract Management Branch
Chief, CMB
Pollack, L. S.


National Institute of Allergy and Infectious Diseases
Microbiology & Infectious Diseases Program
Office of the Director
Director, MIDP
Jordan, W. S.
Molecular Microbiology & Parasitology Branch
Chief, MMPB
Delappe, I. P.
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Puziss, M.
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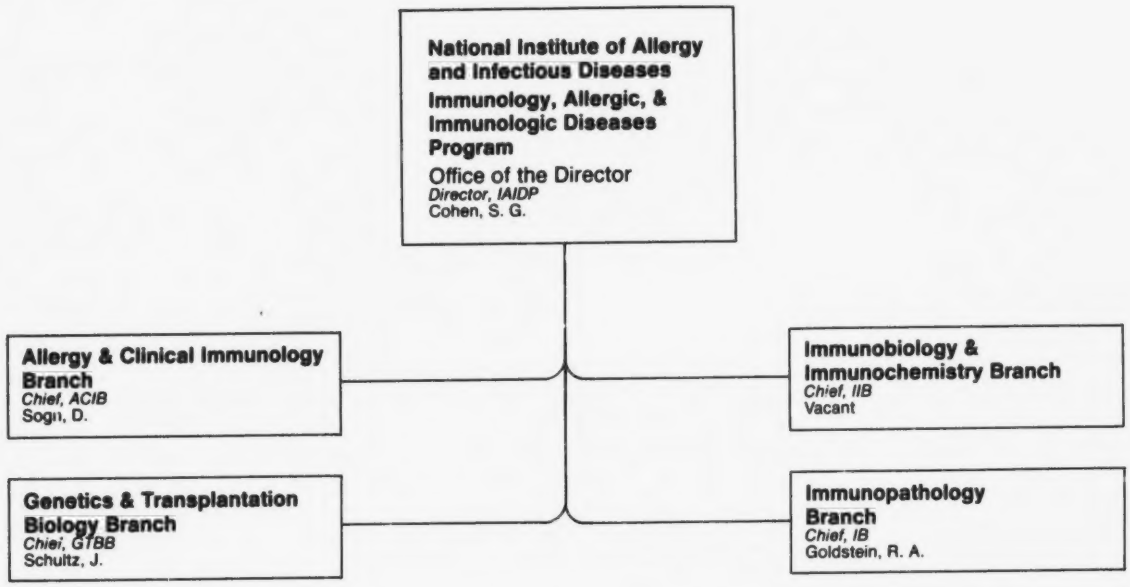
Chief, DAB
Vacant
Clinical & Epidemiological Studies Branch
Chief, CESB
Edelman, R.
Epidemiology & Biometry Section
Chief, EBS
Kaslow, R.


National Institute of Allergy and Infectious Diseases
Immunology, Allergic, & Immunologic Diseases Program
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Cohen, S. G.
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Chief, ACIB
Sogn, D.
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Chief, IIB
Vacant
Genetics & Transplantation Biology Branch
Chief, GTBB
Schultz, J.
Immunopathology Branch
Chief, IB
Goldstein, R. A.

Functional Statements National Institute of Allergy & Infectious Diseases

Intramural Research Program

(1) Plans and conducts the Institute's laboratory and clinical research program, which encompasses allergic, immunologic, and infectious diseases, to insure maximum utilization of available resources in the attainment of Institute objectives; (2) evaluates research efforts and establishes program priorities; (3) allocates funds, space, and personnel ceilings and integrates ongoing and new research activities into the program structure; (4) collaborates with other Institute and NIH programs and maintains an awareness of national research efforts in program areas; (5) advises the Director and staff on the intramural research and areas of science of interest and importance to the Institute.

Microbiology and Infectious Diseases Program

(1) Plans and directs a program of research grants and contracts in microbiology and infectious diseases to insure maximum utilization of available resources to attain program objectives; (2) determines program priorities and recommends funding levels within the program area; (3) prepares analyses of national needs and research efforts to assist advisory groups in recommending new and/or continuing program emphases; (4) plans, directs and coordinates international collaborative program in infectious diseases research; (5) *maintains surveillance over developments in designated program areas and assesses need for research into the causes, diagnosis, prevention, and treatment of infectious diseases and for training related thereto;* (6) consults with voluntary and professional health organizations in identifying and meeting research needs in microbiology and infectious diseases; (7) coordinates the Institute's program in these areas with those of other government agencies and other institutes of the NIH.

Immunology, Allergic, and Immunologic Diseases Program

(1) Plans and directs a program of research grants and contracts in immunology and allergic and immunologic diseases to insure maximum utilization of available resources to attain program objectives; (2) determines program priorities and recommends funding levels within the program area; (3) prepares analyses of national needs and research efforts to assist advisory groups in recommending new and/or continuing program emphases; (4) maintains surveillance over developments in designated program areas and assesses need for research into the causes, diagnosis, prevention, and treatment of allergic and immunologic diseases and for training related thereto; (5) consults with voluntary and professional health organizations in identifying and meeting research needs in immunology, allergic and immunologic diseases; (6) coordinates the Institute's program in these areas with those of other government agencies and other institutes of the NIH.

Extramural Activities Program

(1) Plans and directs a program for the development, production, and distribution to contractors, grantees, and other qualified researchers of research reagents, typing sera, and other research resources unavailable in the open market and necessary for the conduct of research in the program areas of the Institute; (2) plans and directs a program for the development of research manpower in areas of interest to the Institute; (3) provides initial scientific merit review of program project grants and research contracts for the Institute, prepares for final scientific and programmatic review by the National Advisory Council, and coordinates Council activities; (4) advises the Institute Director on research contract, grant, and training program policy; (5) represents the Institute on overall NIH extramural and collaborative program policy committees, coordinates such policy within the Institute and with other NIH institutes; (6) provides all the Institute programs with grant and contract management and processing services and manages the scientific review committees and the National Advisory Allergy and Infectious Diseases Council; (7) provides central management and control over research grants, training, and contract funds, and prepares and issues awarding documents and encumbrance documents for all Institute extramural programs.

Office of Program Planning and Evaluation

(1) Advises the Director, NIAID on the development, analysis, and evaluation of the Institute's programs; (2) provides support to and serves as liaison to program managers in coordinating, integrating, and articulating long range program goals and strategies; (3) advises the Director, NIAID and principal staff on political and administrative developments, and projects their impact on programs and operations; (4) is responsible for the development and preparation of the Institute's annual Research Plan; (5) develops the Institute's annual Evaluation Plan and Program and oversees its application; (6) manages the Institute's computer-based data and records system which classifies projects according to scientific and fiscal content, stores the data, and retrieves information in a variety of formats; (7) maintains a continuing liaison with program planning and evaluation counterparts in other BID's and in the OD, NIH; (8) advises Institute Task Forces to assure that the charge and work of the Task Forces are directed toward the projected planning and evaluation needs of the Institute; (9) synthesizes material for congressional budget presentations; (10) provides principal focus for legislative liaison, legislative tracking and analysis for the Institute; (11) collaborates with program staff in technology transfer activities; and (12) serves as a focus for communications regarding trans-NIH concerns.

Office of Research Reporting and Public Response

(1) Serves as a focal point for the Institute's efforts to interpret and disseminate to the biomedical community, to Congress, and to other specialized groups, the goals and results of NIAID research programs and projects; (2) provides answers to White House, Congressional, and public inquiries in regard to research on infectious and allergic diseases and produces materials designed to facilitate these responses; (3) provides advice and assistance to members of the Institute scientific and ad-

ministrative staff engaged in research and program reporting; (4) serves as an information source for NIH personnel carrying out public affairs assignments related to NIAID interests; (5) cooperates with appropriate voluntary agencies and professional societies in planning and producing health materials for specialized groups; and (6) advises the Director, NIAID, in matters relating to freedom of information.

Office of Recombinant DNA Activities

(1) Is responsible for implementing NIH policies and procedures for the conduct of recombinant DNA research activities; (2) administers a program to support the development of research techniques, safer host-vector systems, risk assessment studies, and other fundamental scientific studies related to recombinant DNA research; (3) reviews and evaluates the composition of Institutional Biosafety Committees and registration documents (Memorandum of Understanding and Agreement) for research projects; (4) develops registries of activities related to recombinant DNA research; (5) coordinates and provides liaison with Federal and non-Federal national and international organizations concerned with recombinant DNA activities; (6) provides advice to the Director, NIH, other Federal agencies, and state regulatory organizations concerning recombinant DNA research; and (7) responds to requests for information on highly technical matters and matters of public policy relative to recombinant DNA activities.

Office of Administrative Management

(1) Directs, coordinates, and conducts administrative management activities of the Institute by providing services in areas of financial management, management analysis, personnel management, and administrative services; (2) advises the Director, Deputy Director, and Program Directors of the Institute on developments in administrative management and their implications and effects on program management; (3) develops policies on administrative management and prepares and issues procedures and guidelines for implementation of administrative policies and requirements.

Research Manpower Development Staff

(1) Is the principal office within the immediate Office of the Director, NIAID for carrying out policies for research manpower development and training; (2) is responsible for all policy and procedure related to extramural research training grants and fellowships; (3) develops statistical and budgetary data and other information related to the projections for research manpower needs relevant to the NIAID mission 10 to 15 years hence, develops proposed programs and strategies to meet these needs, and works with the Institute Director, the Council, and professional societies towards implementing those programs; (4) maintains oversight and statistical data on all other manpower and training activities of the Institute, such as the Staff Fellow, Guest Worker, and Visiting Fellow programs, and also training of pre- and postdoctoral students through employment on research grants and contracts or minority recruitment programs; and (5) Chief of the Office serves as the principal advisor to the Director, NIAID on Manpower Development and Training in the disciplinary areas relevant to the Institute's mission.

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Despite major research advances, allergic and infectious diseases remain high among the Nation's great public health problems. As a group, they rank fifth in the leading causes of death, accounting for some 100,000 deaths a year.

Patients with infectious diseases account for 20 to 30 percent of all visits to physicians' offices, while patients with allergies make at least 45 million visits each year at an estimated cost for care and medications totaling over $1 billion. Asthma is the primary cause of disability among children.

No simply solution exists for either infectious diseases or immunologic disorders, such as allergies. However, practical limitations on resources compel NIAID to establish research priorities—that is, to emphasize problems that appear to be most important or most vulnerable to current technology.

NIAID is supporting and conducting major projects to identify the etiologic agent; define the epidemiology and natural history of disease; establish a repository for tissues and fluids as a research resource; develop methods for early detection of disease; study the immunologic abnormalities of disease; and conduct therapeutic trials with agents to attempt to reconstitute the immune system. NIAID supported more than $9 million for acquired immune deficiency syndrome (AIDS) research during FY 1983.

In addition to the research cited above, which is directly related to AIDS, the Institute has a considerable amount of work that is indirectly related. This encompasses cellular immunity as a general phenomenon, interferon, key viruses, sexually transmitted disease research, and opportunistic infections.

A number of other programs have been singled out for special attention and are described in the following sections under Microbiology and Infectious Diseases, or Immunology, Allergic and Immunologic Diseases—the Institute's two primary extramural program areas.

Microbiology and Infectious Diseases

Acquired Immune Deficiency Syndrome

AIDS has emerged as one of the highest priority programs of the extramural program and is supported in part by special funding from Congress. In addition to small, case-control epidemiological studies of Haitian immigrants, intravenous drug abusers, and homosexual men, two longitudinal cohort studies designed to elucidate risk factors for AIDS have begun with NIAID support; one study in health care workers at the NIH, and the other involving over 5,000 homosexual men residing in five American cities who will be followed longitudinally for three years. Systematic collections of biological specimens from these men will be deposited in a national respository for future use by investigators. Research towards the discovery of the causative agent of AIDS has received major emphasis, as has the search for an early biological marker for the disease and the immunological dysfunctions leading to opportunistic infections. Collaborative treatment trials of immunosuppressed patients and their opportunistic infections are under way using biological response modifiers, new antimicrobials and new combinations of licensed drugs. Particular attention has been directed toward new or improved therapy of cryptosporidiosis, *Mycobacterium avium-intracellulare*, *Pneumocystis carinii*, and candidiasis; drug development, *in vitro* testing and animal models are part of this treatment program.

Respiratory Infections

Respiratory infections are the major cause of acute illness in the U.S. Efforts to control a leading virus-caused respiratory disease—influenza—have been channeled into development of vaccines and antiviral compounds. At present, the best method of preventing influenza is through immunization. NIAID, therefore, pursues the development and testing of new vaccines—such as subunit and live attenuated—as well as the evaluation of inactivated preparations. Studies continue to substantiate the effectiveness of the antiviral amantadine in prevention and treatment of influenza. Influenza research is complemented by virus surveillance activities in the U.S. in human as well as animal populations. These surveillance studies will increase the understanding of the origins of influenza pandemics. In addi-

tion, the support of basic research on influenza viruses and the host's response to influenza virus infection remains an important objective.

Other viruses, such as respiratory syncytial (RS) virus and parainfluenza viruses (types 1, 2, and 3), are etiologic agents for the majority of bronchitis, croup, and pneumonia in infants and children. Sensitive, rapid immunochemical tests are being developed to allow physicians to diagnose these infections in time to aid in the care of the patient. Inactivated vaccines against these diseases have not been successful. Several live attenuated vaccines for RS virus are being developed. Success in developing animal models for RS virus infection has been reported, and studies with these models should provide considerable information on pathogenesis and immunology. In addition, increased emphasis on viral causative agents of lower respiratory disease in children will provide new insights into development of effective control measures.

Hepatitis

Viral hepatitis types A, B, and non-A, non-B constitute a world-wide health problem. NIAID directs its hepatitis research effort toward control of these diseases. Studies sponsored by the Institute include epidemiology, biochemistry, immunology, biophysics, microbiology, animal models, and clinical trials. An inactivated hepatitis B vaccine prepared from purified spherical particles of surface antigen from the plasma of human chronic carriers has been shown to be safe and effective. This vaccine has been licensed and is commercially available. Approaches to a cheaper vaccine include *in vitro* synthesis of HBsAg determinants by chemical means or DNA recombinant technology. Hepatitis A virus has been successfully grown in several cell culture systems, and experimental hepatitis A vaccines are now being developed.

Continuing efforts in viral hepatitis research are aimed at defining the epidemiology of non-A, non-B hepatitis as well as identifying causative agents. To date, efforts to develop assay systems for antigen (A) or antibodies to non-A, non-B viruses have been unsuccessful. The recently described delta agent has been implicated in more severe forms of hepatitis B infections. Efforts are in progress to describe the epidemiology of the delta agent and to characterize this defective agent by biochemical and biophysical techniques.

Sexually Transmitted Diseases

Gonorrhea has been classified as a national epidemic, according to public health authorities who estimate that over 2.5 million new cases occur annually in the U.S. In addition, syphilis remains a disease of public health significance, accounting for 80,000 new cases each year. Other diseases transmitted by the sexual route, now appearing more frequently, are nongonococcal urethritis and genital herpes infections.

The NIAID is implementing recommendations of its 1980 Study Group on Sexually Transmitted Diseases (STD). The Study Group report called for an expanded program on research on the basic biology and immunology of all the microorganisms (bacterial, viral, and parasitic) that are known to be or are suspected of being specific causes of STD. It also recommended further study to develop better diagnostic tests and more effective therapeutic drugs for the STD's, as well as research leading to the development and testing of vaccines.

Under study are some infections caused by chlamydial agents, herpes and cytomegaloviruses, group B streptococci, mycoplasmas, and trichomonads. Studies of growth, nutrition, and physiology of these organisms and investigations leading to their purification and characterization are being supported. Other projects focus on specific antibody development, cellular and humoral defenses, mechanisms of recurrent infection or reinfection, and development of antibiotic resistance.

Development of experimental animal model systems and tissue culture methods are also part of this program. Newer diagnostic techniques and materials, mathematical modeling of epidemics, and development of potential vaccine materials are equally important.

Gonococcal protein vaccines—the most promising vaccine candidates to date—have demonstrated antigenicity in animals and are being tested in humans.

Hospital-Associated Infections

Hospital-associated, or nosocomial, infections have in recent years emerged as a significant health problem and cause of excess morbidity and mortality. They are also directly involved in spiraling health care costs. An estimated 2 million hospital-associated infections occur annually in the U.S. Increasing numbers of patients undergoing immunosuppressive therapy are at risk to infections caused primarily by opportunistic microorganisms that usually do not pose a problem for well individuals.

Studies are being carried out on immune mechanisms, both cellular and humoral, that protect healthy people against normal microbial flora commonly encountered in everyday situations. Disturbances in the host's resistance mechanisms in hospitalized or immunocompromised patients will be a major research focus. Gram negative bacilli are primary etiologic agents and many have become resistant to antibiotics. Certain viral and parasitic agents as well as fugal species are also under investigation.

Interaction of microbial products, such as toxins, with serum components resulting in the shock syndrome are of interest, as are corrective measures. Research on the hospital environment, including viral transmission mechanisms and epidemiologic investigations, is also supported. Part of this effort has been directed toward the SENIC project (Study on the Efficacy of Nosocomial Infection Control), and unprecedented retrospective study for determining rates of hospital infections. Conducted by the Centers for Disease Control, this project should identify problems suited for targeted research.

Parasitic Diseases

The complexity of structure and function of parasites has made the study of immunological responses to these infectious agents exceptionally challenging and rewarding. Goals of NIAID-sponsored studies on the immunology of parasitic diseases include the development of effective vaccines against malaria, schistosomiasis, filariasis, etc.; the intervention in the host response to prevent or

ameliorate immunologically mediated disease processes; and the development or improvement of immunodiagnostic procedures.

NIAID's program on biological regulation of vectors aims to advance fundamental studies that might lead to effective control methods that do not include using synthetic organic pesticides with deleterious side effects. Studies have been directed toward the use of diseases, parasites, or predators that attack and harm the vector. Other studies focus on displacing the vector from the environment by an organism that does not transmit disease, or on modifying vector behavior to easily kill or otherwise prevent it from transmitting disease.

NIAID supports two contracts to provide investigators with animals and vectors infected with species of schistosomes and filariae. These contracts supply researchers in disciplines (immunology, pharmacology, biochemistry, etc.) unable to obtain or maintain parasite cycles, but are required to help solve the complex problems involved in the ultimate control of these important diseases.

Enteric Diseases

Gastroenteritis, still one of the five leading causes of childhood deaths in North America, is also one of the top five causes of absences from school and work and one of the ten most common causes of visits to the doctor and admissions to hospitals. Morbidity and mortality from gastroenteritis is even more severe in developing countries of the world.

Basic research on gastrointestinal immunity and on bacterial virulence factors, including enterotoxins, represent important areas for investigation. New laboratory diagnostic techniques to study the epidemiology, cause and pathogenesis of acute gasteroenteritis are being carried out at an Enteric Diseases Center established by NIAID in Baltimore and in the Fort Apache Indian Reservation, Arizona.

Major efforts are under way to develop and to test oral vaccines against bacteria causing traveler's diarrhea, such as enterotoxigenic *E. coli*, and against cholera, shigellosis, typhoid fever and rotavirus. Recombinant DNA engineering and monoclonal antibodies will help accelerate vaccine development. The Institute also supports limited studies to improve oral rehydration solutions used to treat diarrhea and dehydration.

Bacterial Vaccines

Although effective antimicrobial agents have been developed, increasing numbers of bacterial strains resistant to antibiotics have evolved. In addition, in many cases, the onset and progression of bacterial diseases are so rapid that effective antibiotic treatment is not possible. A major NIAID effort is directed toward developing and testing bacterial vaccines. A polyvalent pneumococcal vaccine has been licensed for persons over 2 years of age who are at high risk of developing pneumococcal infections. The Institute continues to evaluate this vaccine in prevention of infections in persons with conditions predisposing to pneumococcal diseases, and in prevention of pneumococcal otitis media (middle ear disease) in infants.

Polysaccharide vaccines have also been developed against *Neisseria meningitidis* and *Haemophilus influenzae*—primary causes of bacteria meningitis—and are being tested for safety and efficacy. During a recent epidemic in Finland, the efficacy of one such vaccine for group A meningococcal meningitis was reported in young children and infants. This was the first demonstration of vaccine-induced protection against bacterial meningitis in the very young—the group at highest risk for this infection. NIAID continues to develop a polyvalent meningitis vaccine for newborns and to investigate the possibility of hyperimmunizing prospective mothers. Development of a primate model to study effects of vaccines on pregnant females and their offspring may lead to preventing effects of infectious diseases on unborn children.

Antibiotic Trials

As promising new antibacterial and antifungal agents are developed by the pharmaceutical industry, they must be critically evaluated for safety and efficacy in man. NIAID selects licensed and unlicensed drugs for trial because the pharmaceutical industry is unlikely to test them further in man, even though the drugs may show considerable clinical promise. Most frequently, NIAID studies are controlled, prospective, and multicentered; they are designed to compare efficacy, safety, duration, and costs with standard chemotherapeutic agents. A collaborative effort often exists among the drug manufacturer, the Food and Drug Administration, the clinical investigators, and the NIAID as sponsoring agency. Currently, the NIAID supports a controlled, multicentered collaborative trial of new systemic antifungal agents and an improved treatment regimen for urinary tract infections in women.

Antiviral Substances

Control of viral diseases is primarily preventive relying on administration of immune serum globulins or vaccines when available; but a need exists to develop antiviral substances, either as therapeutic or prophylactic agents, for a broad variety of viral diseases.

Adenine arabinoside (ara-A) has been identified as an effective therapeutic compound against herpes encephalitis and was licensed for this use in 1978. It has been found to be equally effective against neonatal herpes. It has also recently been approved for treatment of varicella zoster (shingles) infections in immunocompromised individuals. Interferon is being evaluated for treatment of initial genital herpes virus infections in women, of laryngeal papillomatosis in children, and of genital warts in adults.

Clinical trials with ara-A, ara-AMP, and other promising antivirals will be continued and broadened, as well as other basic studies. A promising compound, 9-(2-hydroxyethyoxymethyl) guanine, or Acyclovir (trade name), developed by Burroughs Wellcome Laboratories, is highly specific for herpesviruses and is currently undergoing extensive clinical evaluation. A new promising compound is bromovinyl deoxyuridine; animal studies prior to clinical testing have been initiated. Other studies include searchers for better methods of interferon production, mechanisms of action of interferon including its role of immune regulatory functions, development of new antivirals and mechanisms of viral inhibition. Fur-

ther data on the use of amantadine and its analogue, rimantadine, in the prophylaxis and therapy of influenza A are being gathered.

Additionally, animal models mimicking viral diseases in man are important in the antiviral development program. They serve as a ready mechanism to screen and evaluate new antiviral substances. The animal models available are currently being used to evaluate fluoridodoara cytosine and its derivatives. Both *in vitro* and *in vivo* testing of combinations of antiviral agents have also been initiated.

Molecular Biology

During the past few years, the development of certain techniques in the area of molecular biology have made it possible to construct functional DNA molecules *in vitro* that contain segments derived from diverse biological sources. Scientific innovations leading to this technological breakthrough were mostly derived from basic studies on the mechanism of restriction—which normally acts as a barrier to gene flow among microorganisms—and the molecular biology and genetics of bacterial plasmids, especially those specifying drug resistance. Whereas DNA recombination in nature has been random, experimental techniques now enable *in vitro* construction and subsequent replication of DNA molecules needed for specific experimental goals. This basic knowledge coupled with refinements of existing technology should ultimately provide a greater understanding of the pathogenicity (at the molecular level) of viral, bacterial, mycotic, and parasitic agents. This may in turn lead to improved prevention, diagnosis, and treatment of infectious diseases. Another goal is the synthesis of biologically useful substances through the construction of bacterial cells containing functional DNA of either plant or animal origin.

International Biomedical Research

The Institute's International Biomedical Research Program involves both grants and contracts to promote scientific research on disease of great importance to the health of the people in developing and developed tropical countries of the world.

Immediate aims are to develop or improve technologies for diagnosing, treating, and controlling these diseases with the ultimate goal of disease prevention. For example, the U.S.-Japan Cooperative Medical Science Program, which has been in effect since 1965, provides a mechanism for United States and Japanese scientists to cooperate in studying eight disease categories of importance to the health of Asians. A new board on immunology as established in 1981.

An agreement between the United States and the Soviet Union was signed in June 1977. Scientists collaborated in a broad program of research on influenza and other respiratory diseases. The development of antiviral substances—including interferon and its inducers—for treatment and prevention of influenza and other acute respiratory viral diseases is a major part of the NIAID activities.

In September 1979, the International Collaboration in Infectious Diseases Research Program replaced the International Centers for Medical Research and Training which has been operational since 1960. Under the new program, research centers are established in tropical countries through multidisciplinary program project grants awarded to U.S. institutions, as well as individual international exploratory/developmental research grants awarded to support U.S. investigators who have a scientific collaborator in a foreign country. This is designed to promote true collaboration and scientific exchange between a U.S. scientist and overseas counterpart. Special attention is given to the six diseases of WHO's Special Programme for Research and Training in Tropical Diseases, although no disease of major health importance to a tropical country is excluded.

Other international research activities are conducted within the Institute's intramural program.

Immunology and the Allergic and Immunologic Diseases

This program focuses on the immune system as it functions in the maintenance of health and as it malfunctions in the production of disease. It encompasses both basic and clinical research.

Basic research is conducted under two segments: Immunology and Immunochemistry, and Genetics and Transplantation Biology. Clinical research is supported in two areas: Asthma and Allergic Diseases, and Clinical Immunology and Immunopathology. NIAID's approach integrates anatomy, physiology, cell biology, genetics, biochemistry, pathology, pharmacology, immunology, and immunochemistry.

Special emphasis has been given recently toward implementing recommendations made by two NIAID advisory committees, a Study Group on Immunology and a Task Force on Asthma and the Other Allergic Diseases.

Immunobiology and Immunochemistry

The biology and chemistry of the immune system and its products are the concerns of this program area. Immunobiologic studies focus on the origin, maturation, and interactions of the immune system's major cells, lymphokines, and other substances produced by these and other cells that mediate immune reactions. Studies include the mechanisms responsible for the induction and regulation of the immune response. Immunochemical research encompasses the delineation of the chemical structure and function of antigens and antibodies, the chemical basis of immunologic specificity, the regulation of immunoglobulin synthesis, and the mechanisms of antigen-antibody reactions.

Lymphocyte Biology

Program project goals in lymphocyte biology include the following:

- ☐ a complete understanding of the life history of immunocompetent cells,
- ☐ the delineation of genetic factors that determine the differentiation and functions of these cells, and
- ☐ the development of the capability to intervene and manipulate the immune system in health and in disease.

Resources for Basic Immunology

With the advent of monoclonal antibodies as powerful tools for the analysis and manipulation of the im-

mune response, a need arose for the easier sharing of these reagents and for the securing of the cell lines producing the especially valuable ones against accidental loss. In response, the program established a Hybridoma Cell Bank whose function is the acquisition, characterization, maintenance and distribution of hybridoma cell lines producing monoclonal antibodies of interest to investigators in the fields of immunology and infectious diseases.

Through a separate mechanism, the program also acquires and distributes conventional and monoclonal antibodies useful in studies on the polymorphic murine cell-surface antigens.

Immunogenetics and Transplantation Immunology

Primary program goals are to clarify the organization and the mechanisms of expression of the genes on which immune function depends, to characterize the protein products of the genes, including the histocompatibility antigens, to determine the manner in which these gene products condition the response to foreign antigens, and to develop regiments to modulate the immune response to facilitate engraftment of transplanted organs and tissues.

Support is provided through grants for basic studies on the molecular genetics of the immune system, its phylogeny and ontogeny, for investigations of the structure and function of histocompatibility antigens, and for clinical research on factors that affect the success of transplantation, including strategies of immunosuppression.

Control of Graft Rejection

A fundamental objective of the program is to stimulate the development of interventions in the immune response to foreign tissues based on a detailed understanding of the regulatory networks of the immune system. To that end research is supported, principally through contracts and program projects:

☐ to better define the mode of action of physical and pharmacological immunosuppressants by examining their effects on the functionally distinct lymphocyte subsets,

☐ to develop reagents which will permit better characterization of antigens known to and suspected of triggering rejection, and

☐ to develop and evaluate new agents that will be safe and effective in immunomodulation.

Statistical Analysis of Data on Transplantation

As part of its mission to improve the outcomes on transplantation, the program, through its own resources and in collaboration with national and regional organizations who collect clinical data on donors and recipients of transplants, performs and assist in the statistical analysis of such data to identify risk factors or effective treatments and to measure their relative importance. Such information can then be used by clinicians to assist in their choice of candidates for transplantation and of therapeutic strategies.

NIAID Serum Bank

The Bank is the chief source of standard reagents to identify the histocompatibility antigens that appear to play an important role in rejection of a transplanted organ of tissue. The Institute provides for the collection, analyzes, and distribution of these antisera to approximately 400 laboratories in this country and abroad. The program makes possible the matching of donors and recipients for transplants, and supports studies on the relationship of HLA antigens to disease susceptibility.

The contracts program which supports the Serum Bank includes the following:

☐ acquisition, characterization, and distribution of tissue typing reagents, and

☐ evaluation and improvement of tissue typing methodologies.

In addition, the Serum Bank performs studies on the population genetics of the HLA antigens. The Institute is the primary source of standard reagents for distribution and analyzes for basic immunogenetic studies of murine transplantation antigens.

Asthma and Allergic Diseases

The cause, pathogenesis, diagnosis, prevention, and treatment of both naturally occurring and acquired allergic diseases are of program concern. Various types of allergic problems are currently under investigation: immediate type hypersensitivity and its disorders, including asthma, allergic rhinitis, atopic dermatitis, urticaria and angioedema; allergic reactions and disorders caused by insect bites and stings, foods, airborne allergens, and infectious agents; manifestations of delayed hypersensitivity and contact dermatitis; and the mechanisms of drug reactions and chemical sensitization. Studies also include structure of the antibody, particularly IgE, and the chemical mediators released by the interaction of antigen and antibody with target cells; the isolation and chemical characterization of the active fractions of allergenic agents; and therapy and prevention of allergic disorders and hypersensitivity reactions by immunotherapy with specific antigens or drugs.

Asthma and Allergic Disease Centers

A network of 16 Asthma and Allergic Disease Centers represents an effort to integate the basic concepts of immunology, genetics, biochemistry, and pharmacology into clinical investigations of patients with asthma and allergic diseases. This program encourages collaboration between basic and clinical scientists, provides a research environment favorable for such interactions, and implements clinical application of adequately tested research findings and procedures. It is believed that this will lead to an understanding of the pathophysiologic, biochemical, and immunologic mechanisms of these disorders.

NIAID also assists investigators by providing various purified allergens for use as standards or by supplying working quantities of unusually rare or expensive materials for research. Currently, these materials include hypersensitivity pneumonitis antigens and antiserum, purified grass and ragweed antigens, cat allergens, food preparations, and the venoms of honeybees, yellow hornets, white-faced hornets, yellow jackets, and paper wasps.

Special Studies in Allergy

A multi-institutional collaborative study is in progress to evaluate major

and minor penicillin determinant reagents and to identify individuals at risk of developing severe and potentially fatal shock reactions from penicillin.

The problem of asthma and hypersensitivity lung reactions due to environmental and occupational exposures has become increasingly important. Efforts are under way to foster and design investigative studies that will define pathogenic mechanisms and epidemiologic characteristics of such immunologic and toxic pulmonary disorders.

Special efforts also are being made to effect appropriate research studies in the underserved area of food allergy and to develop critical diagnostic criteria required for the management of patients affected by food and additive preparations.

Immunologic Diseases

Investigations of underlying mechanisms of disease and applications of basic knowledge to the cause, prevention, and management of immunologic disorders are approached from either of two disciplines—clinical immunology or immunopathology. Studies of clinical immunology involve acquired and inherited diseases associated with dysfunctions of the immune system, whereas the immunopathology studies encompass genetics, cytology, biochemistry, pathology, and pharmacology of the immune system.

Pertinent areas under investigation include the following:

☐ Immune deficiency diseases arising from primary defects in development or maturation of the immune responses,

☐ acquired immune deficiency syndrome (AIDS)

☐ clinical manifestations mediated by products of lymphocytes,

☐ diseases associated with immune complexes and autoimmune phenomena,

☐ immunodermatology—skin disorders involving the immune system and

☐ immunotherapy of disease processes.

Program Projects

To enhance major aspects of this effort, six program projects have been established at university and medical research centers. They have been designed to focus biomedical disciplines on clinically relevant problems dealing with disorders of the immune system.

In 1978, NIAID established four Centers for Interdisciplinary Research on Immunologic Diseases (CIRID) to accelerate clinical application of new knowledge on the immune system. Protocols were designed to favor integration and coordination of research projects in clinical immunology being pursued in other clinical specialities (e.g., dermatology, pulmonary medicine, rheumatology, infectious diseases, and otorhinolaryngology) with those in basic research. Study of at least one allergic disease was a necessary component of each center's effort. Centers will be developing special projects and activities such as recruiting and training of clinical investigators, demonstration programs, assessing the regional socioeconomic impact of immunologic and allergic diseases, and continuing medical education of practicing physicians.

Office of Recombinant DNA Activities

The Office of Recombinant DNA Activities was transferred from the National Institute of General Medical Sciences to the NIAID in September 1979 to facilitate the administration of recombinant DNA activities supported and monitored by the NIH. Under NIAID, the office has continued a variety of efforts including the review of special requests submitted to the NIH involving recombinant DNA technology as well as implementation of NIH policies and procedures for conducting this research.

Several proposals for large-scale experiments have been approved. These experiments for recombinant DNA rigorously characterized and free of harmful sequences include attempts at large-scale production of human insulin, human growth hormone, and human leukocyte and fibroblast interferon.

NIAID continues to manage the NIH program to assess the risks of recombinant DNA research.

Rocky Mountain Laboratory

Hamilton, Montana

The earliest studies of Rocky Mountain Spotted Fever were begun at this laboratory in 1902. It was formally established as a PHS Field Station in 1921. Although the Rocky Mountain Laboratory remains a center for the study of medically important ticks and diseases trasmissible from animals to man, a recent reorganization has diversified the Laboratory and focuses on basic research at the cellular level.

In March 1979, three new laboratories were established at the Rocky Mountain Laboratory facility; the Laboratory of Microbial Structure and Function, the Laboratory of Persistent Viral Diseases, and the Epidemiology Branch. This permits the continuation of important studies on the natural history and epidemiology of certain infectious diseases, particularly rickettsial, as well as the development of research, at the molecular level, of host-parasite relationships. It is planned that the Institute's major research efforts in bacteriology will be at the Rocky Mountain Laboratory.

The Kinyoun Lectures

The Kinyoun Lecture series was established by the National Institute of Allergy and Infectious Diseases in 1979 to honor Dr. Joseph J. Kinyoun who, in 1887, established the small Laboratory of Hygiene at the Marine Hospital on Staten Island from which evolved the National Institutes of Health. The NIAID is the direct lineal descendent of the Laboratory of Hygiene within the NIH. These lectures will, for the most part, emphasize the interdependence of infection and immunity. The following lectures have been given:

April, 24, 1979
"The Role of Complement in Natural Resistance to Infections"
Dr. Hans J. Muller-Eberhard
Scripps Clinic and Research Foundation

May 8, 1979
"Cell-Mediated Immunity to Intracellular Parasites and Polymorphic Major Transplantation Antigens"
Dr. Rolf M. Zinkernagel
Scripps Clinic and Research Foundation

October 9, 1979
"Host Proteases and Virus Virulence: the Unkindest Cut"
Dr. Purnell W. Choppin
Rockefeller University Hospital

November 27, 1979
"Transplantation Experiments in Nature and their Biological Significance"
Dr. Rupert Billingham
University of Texas Health Science Center at Dallas

March 5, 1980
"Fatal Infectious Mononucleosis and Polyclonal B Cell Lymphoma"
Dr. Dorothy Horstmann
Yale University School of Medicine

May 5, 1980
"The Molecular Cloning of E. Coli Enterotoxin Genes"
Dr. Stanley Falkow
University of Washington School of Medicine

December 19, 1980
"Antibody Genes and Strategies for their Expressions"
Dr. Leroy Hood
California Institute of Technology

April 3, 1981
"Murine SLE A Model for Autoimmunity"
Dr. Frank J. Dixon
Research Institute of Scripps Clinic and Research Foundation

December 3, 1981
"Gene Expression in Heterospecific Hosts: Strategies and Surprises"
Dr. Stanley Cohen
Stanford University School of Medicine

May 14, 1984
"The Murine Major Histocompatibility Complex: Polymorphism, Diversity, Complexity"
Dr. Stanley G. Nathenson
Albert Einstein College of Medicine

5

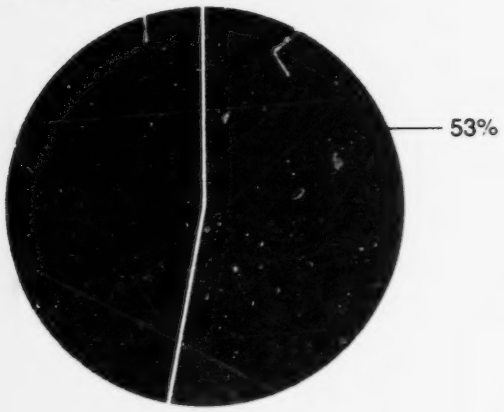
Morbidity From Selected Acute Conditions *

Condition	Days per 100 persons per year			
	Restricted activity	Bed disability	Work loss†	School loss‡
Respiratory conditions	380.7	192.7	129.1	271.4
Upper respiratory	177.1	78.2	50.5	143.3
Influenza	145.1	84.8	60.2	106.2
Bronchitis	20.3	10.1	6.6	10.2
Pneumonia	22.6	14.0	8.1	6.4§
Other	15.5	5.6	3.7	5.3§
Infective and parasitic diseases	96.6	49.9	26.0	93.1
Digestive system conditions	53.6	26.6	21.4	23.1
Dental conditions	14.6	5.6	6.3	4.0§
Diseases of the ear	30.2	12.1	3.1	19.7
Genitourinary disorders	36.8	16.4	13.1	9.9
Diseases of the musculoskeletal system	30.8	10.3	11.9	1.4§
Diseases of the skin	10.6	3.5	4.0	1.5§
Deliveries and disorder of pregnancy and the puerperium	24.2	11.0	6.3	—
Headaches	5.0	2.6	1.4	3.5§
Injuries	214.7	63.0	118.0	39.4
All other acute conditions	56.6	25.2	16.3	14.8

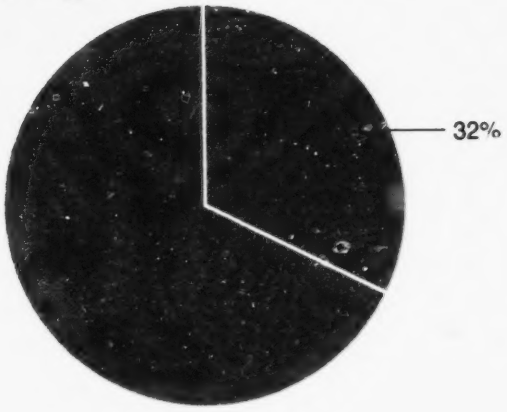
*National estimate based on household interviews of the civilian noninstitutionalized population. United States, 1979.
"Acute" condition is defined as one that lasted less than 3 months and involved medical attention or restricted activity.
†Per 100 currently employed persons.
‡Children 6-16 years of age.
§Figure does not meet standards of reliability or precision.
Source: Derived from published and unpublished data from NCHS, HHS (301) 436-7089.

Physician Office Visits:
For Allergies and Infectious Diseases*

Under Age 24



All Ages



*Based on 1981 statistics, provided by NCHS, for 30 most common diagnoses.

Physician Office Visits for 30 Most Common Diagnoses
Estimated Cost of Diagnoses Relevant to NIAID*
Up to Age 24

Rank	Diagnosis	Office Visits	Estimated Cost
1	Health Supervision of infant or child	18,373,880	
2	Suppurative and unspecified otitis media	11,236,195	$280,904,875
3	Normal pregnancy	10,347,447	
4	Acute upper respiratory infections of multiple of unspecified sites	8,839,493	$220,987,325
5	General medical exam	6,295,302	
6	Diseases of sebaceous glands	5,784,949	
7	Acute pharyngitis	5,362,562	$134,064,050
8	Acute tonsillitis	4,528,497	$113,212,425
9	Allergic rhinitis	3,142,362	$78,559,050
10	Bronchitis, not specified as acute or chronic	2,928,921	$73,223,025
11	Special investigations and exams	2,767,382	
12	Disorders of refraction and accommodation	2,556,358	
13	Other diseases due to viruses and Chlamydiae	2,526,829	$63,170,725
14	Asthma	2,484,025	$62,100,625
15	Contact dermatitis and other eczema	2,408,242	$60,206,050
16	Other non-infectious gastroenteritis and colitis (allergic)	2,172,584	$54,314,600
17	Follow-up examination	2,093,979	
18	Certain adverse effects not elsewhere classified (allergic)	1,793,588	$44,839,700
19	Nonsuppurative otitis media and Eustachian tube disorders	1,709,807	$42,745,175
20	Other disorders of urethra and urinary tract	1,614,429	$40,360,725
21	Streptococcal sore throat and scarlet fever	1,459,576	$36,489,400
22	Disorders of external ear	1,433,142	$35,828,550
23	Observation and evaluation for suspected conditions	1,381,975	
24	Viral infections in conditions classified elsewhere and of unspecified site	1,358,803	$33,970,075
25	Disorders of conjunctiva	1,299,142	$32,478,550
26	Chronic sinusitis	1,231,330	$30,788,250
27	Inflammatory disease of cervix, vagina and vulva	1,103,593	$27,589,825
28	General symptoms	1,028,081	
29	Postpartum care and examination	1,015,667	
30	Non, unsuitable, non codable or illegible	955,088	
			$1,465,842,000

Total Visits—111,233,228 / 30 Diagnoses
"All" Visits— 58,633,120 / 19 Diagnoses = 63% of diagnoses and 53% of visits

Physician Office Visits for 30 Most Common Diagnoses Estimated Cost of Diagnoses Relevant to NIAID* (continued)

All Ages

Rank	Diagnosis	Office Visits	Estimated Cost
1	Essential hypertension	28,764,954	
2	Normal pregnancy	25,051,262	
3	Health supervision of infant or child	18,582,597	
4	Acute upper respiratory infections of multiple of unspecified sites	14,852,844	$371,321,100
5	General medical exam	14,131,720	
6	Suppurative and unspecified otitis media	13,105,503	$327,637,575
7	Diabetes mellitus	10,771,748	
8	Special investigations and exams (diagnostic skin and sensitivity tests)	10,547,722	
9	Follow-up examination	10,207,239	
10	Diseases of sebaceous glands	9,661,040	
11	Neurotic disorders	9,589,052	
12	Acute pharyngitis	8,472,935	$211,823,375
13	Allergic rhinitis	8,440,621	
14	Disorders of refraction and accommodation	8,215,602	$211,015,525
15	Bronchitis, not specified as acute or chronic	6,731,420	$168,285,500
16	Other forms of chronic ischemic heart diseases	6,498,444	
17	Osteoarthrosis and allied disorders	5,690,845	
18	Contact dermatitis and other eczema	5,228,126	$130,703,150
19	Acute tonsillitis	5,147,663	$128,691,575
20	Asthma	5,024,381	$125,609,525
21	Other disorders of urethra and urinary tract	4,860,875	$121,521,875
22	Obesity and other hyperalimentation	4,635,057	
23	Chronic sinusitis	4,515,676	$112,891,900
24	Other non-infectious gastroenteritis and colitis (allergic)	4,465,200	$111,630,000
25	Sprains and strains of other and unspecified part of back	4,464,661	
26	Other unspecified disorders of back	4,334,572	
27	Cataract	4,238,695	
28	Certain adverse effects not elsewhere classified (allergic)	4,226,082	$105,652,050
29	Other and unspecified arthropathies	4,216,938	
30	Peripheral enthesopathies and allied syndromes	4,018,805	
			$2,126,783,150

Total Visits—268,692,879 / 30 Diagnoses
"All" Visits— 85,071,326 / 12 Diagnoses = 40% of diagnoses and 32% of visits

*Based on 1981 statistics, provided by NCHS, for 30 most common diagnoses and on NIAID estimate of $25 as an average office visit fee.

Number, Percent Distribution and Estimated Cost of Drugs For Conditions Relevant to NIAID*

Therapeutic Categories	Number of drugs in thousands	Percent Distribution	Estimated Cost
All categories	651,153	100.0	
Antihistamine drugs	43,511	6.7	$435,110,000
Anti-infective agents	104,804	16.1	$1,048,040,000
Antineoplastic agents	4,019	0.6	
Autonomic drugs	24,102	3.7	
Blood formation and coagulation	8,020	1.2	
Cardiovascular drugs	68,779	10.6	
Central nervous system drugs	104,391	16.0	
Electrolytic, caloric, and water balance	55,277	8.5	
Expectorants and cough preparations	17,864	2.7	$178,640,000
Eye, ear, nose and throat preparations	23,546	3.6	$235,460,000
Gastrointestinal drugs	24,196	3.7	$241,960,000
Hormones and synthetic substances	53,999	8.3	
Serums, toxoids, and vaccines	22,068	3.4	$220,680,000
Skin and mucous membrane preparations	49,026	7.5	
Spasmolytic agents	10,654	1.6	
Vitamins	20,507	3.1	
Other therapeutic agents, pharmaceutic devices and aids	11,553	1.8	
Therapeutic category undetermined	4,840	0.7	
		TOTAL	$2,359,890,000

*Source: NCHS Advancedata, No. 88, March 16, 1983 and NIAID estimate of $10 as an average drug cost.

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Roster
National Advisory Allergy and Infectious Diseases Council

(Term expires October 31 of year indicated)

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Executive Secretary
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Director
Extramural Activities Program
National Institute of Allergy and Infectious Diseases
Westwood Building, Room 703
Bethesda, Maryland 20205

Charter
National Advisory Allergy and Infectious Diseases Council

Purpose

The Secretary of Health and Human Services is mandated under Section 301 of the Public Health Service Act (42 U.S. Code 241) to support and encourage research, studies, and related activities in the health fields. This mandate is fulfilled in part by the mechanism of research grants-in-aid awarded by the research institutes and divisions of the National Institutes of Health. In addition, the Secretary is authorized under section 472 of the Public Health Service Act (42 U.S.C. 2891-1) to support research training

through National Research Service Awards to individuals. Section 301 states in part that the Secretary shall "... make grants-in-aid to universities, hospitals, laboratories, and other public and private institutions ..." The Council provides final review of applications for (1) grants for research projects in the fields of allergy, immunology, and infectious diseases; (2) grants and awards for research training activities in such areas; and recommends to the Director, National Institutes of Health, and the Director, National Institute of Allergy and Infectious Diseases, the approval of those applications which merit support. It also makes recommendations to the Director, National Institutes of Health, on programs, policy, and activities in the areas of immunology, allergic and immunologic diseases, and microbiology and infectious diseases.

Authority

42 U.S. Code 289b, Section 432 of the Public Health Service Act, as amended.

This Council is governed by the provisions of Public Law 92-463 as amended (5 U.S.C. appendix I), which sets forth standards for the formation and use of advisory committees.

Function

The National Advisory Allergy and Infectious Diseases Council shall advise the Secretary; the Assistant Secretary for Health; the Director, NIH; and the Director, NIAID, regarding applications for grants-in-aid relating to research projects and grants and awards for research training activities in the fields of immunology, allergic and immunologic diseases, and microbiology and infectious diseases, and recommends to the Director, National Institutes of Health, approval of those projects or research and training activities which merit support.

Structure

The National Advisory Allergy and Infectious Diseases Council shall consist of the Secretary, or designee, as Chair; the chief medical officer of the Veterans Administration or representative, and a medical officer designated by the Secretary of Defense, who shall be *ex officio* members; and fifteen members selected by the Secretary, or designee, who are authorities knowledgeable in the fields of medical sciences—especially in the areas of immunology, allergic and immunologic diseases, and microbiology and infectious diseases—education, or public affairs. Ten of such fifteen shall be leading medical or scientific authorities outstanding in the study, diagnosis, treatment, or prevention of allergy, immunology, and infectious diseases.

Members shall be invited to serve for overlapping four-year terms; terms of more than two years are contingent upon the renewal of the Council by appropriate action prior to its expiration. Members may serve after the expiration of their terms until their successors have taken office.

There shall be two standing subcommittees of the National Advisory Allergy and Infectious Diseases Council, composed entirely of members of the parent body—the Allergy and Immunology Subcommittee and the Microbiology and Infectious Diseases Subcommittee. The subcommittees will meet usually at the time of the regularly scheduled Council meetings for the purpose of reviewing grant applications and making recommendations to the full Council.

Management and support services shall be provided by the Office of the Executive Secretary of the National Advisory Allergy and Infectious Diseases Council, National Institute of Allergy and Infectious Diseases.

Roster
Allergy, Immunology, and Transplantation Research Committee

(Term expires June 30 of year indicated)

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(Term expires June 30 of year indicated)

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Budget History of the NIAID: Fiscal Years 1960-1983

Fiscal Year	Budget Request To Congress	House Allowance	Senate Allowance	Appropriation	% Change Appropriation from Budget Request
1960	24,071,000	30,286,000	41,000,000	34,054,000	41.5
1961	34,739,000	38,439,000	48,234,000	44,000,000	26.7
1962	48,322,000	52,182,000	60,000,000	56,091,000	16.1
1963	59,342,000	62,142,000	68,142,000	66,142,000	11.5
1964	69,226,000	68,723,000	69,226,000	68,723,000	−0.7
1965	68,500,000	70,100,000	70,400,000	70,100,000	2.2
1966	74,987,000	74,987,000	77,987,000	77,987,000	4.0
1967	85,702,000	88,670,000	90,670,000	90,670,000	5.8
1968	94,422,000	94,422,000	98,922,000	94,422,000	0.0
1969	98,562,000	95,119,000	99,119,000	96,840,500	−1.7
1970	102,389,000	102,389,000	105,000,000	97,342,000	−4.9
1971	99,219,000	102,249,000	102,749,000	102,386,000	3.2
1972	99,342,000	106,662,000	112,979,000	109,117,500	9.8
1973	112,649,000	113,414,000	135,000,000	113,414,000	0.7
1974	98,693,000	112,744,000	114,000,000	111,089,000	12.6
1975	110,404,000	105,843,000	122,000,000	119,452,000	8.2
1976	108,711,000	118,918,000	118,918,000	126,852,000	16.7
1977	135,615,000	139,615,000	143,615,000	141,000,000	4.0
1978	153,442,000	157,042,000	162,000,000	162,341,000	5.8
1979	166,802,000	183,198,000	183,198,000	191,328,000	14.7
1980	190,202,000	215,402,000	200,000,000	215,402,000	13.3
1981	226,412,000	232,355,000	239,355,000	232,077,000	2.7
1982	243,755,000[1]	259,763,000	246,452,000	235,895,000[2]	−5.0
1983	246,043,000	276,367,000	270,795,000	279,129,000[3]	+13.4

[1]Revised request (Reagan).
[2]Authority is the 1982 Senate Allowance level, less approximately 4%, through March 31, 1982.
[3]Include Supplemental Appropriation.

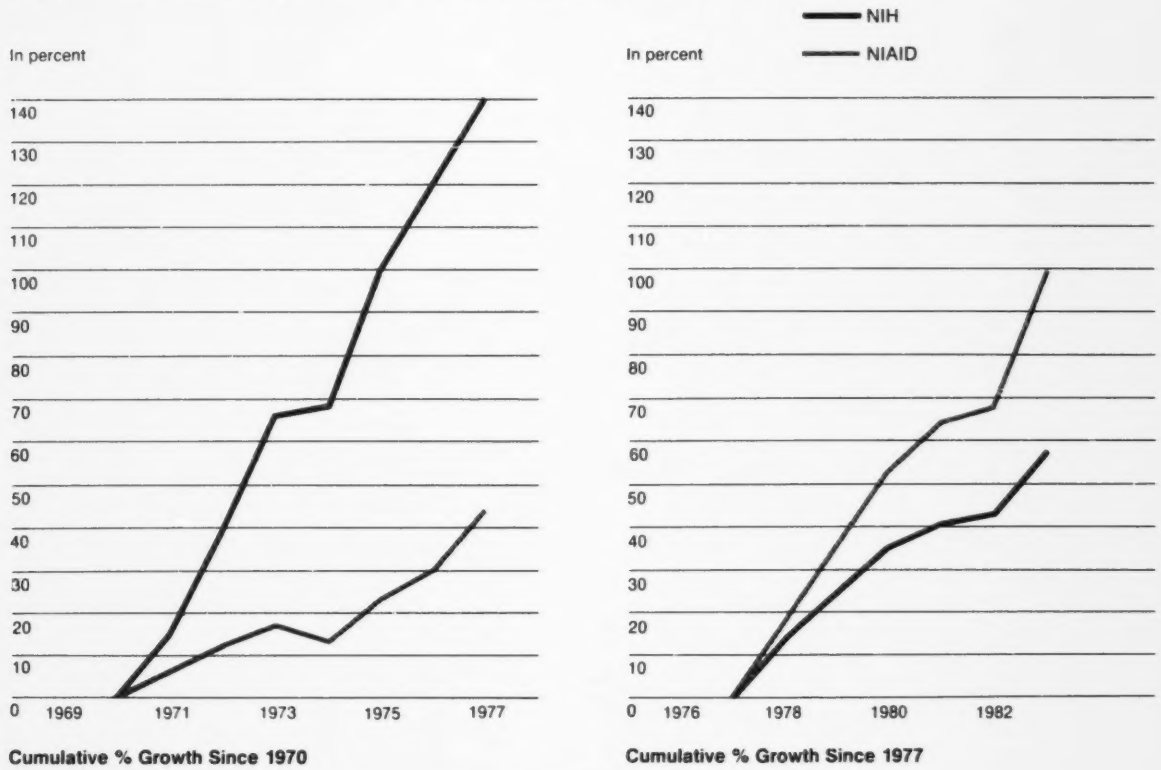
Appropriation History, Fiscal Years 1962-1983
Summary—National Institutes of Health

Dollars in thousands

Fiscal Year	PHS Request to Department	Department Request to Office of Mgmt. and Budget	Budget Request to Congress	House Allowance	Senate Allowance	Appropriation
1962	$ 570,875	$ 548,818	$ 494,676	$ 548,818	$ 710,100	$ 629,459
1963	746,662	719,200	653,501	707,201	752,201	737,201
1964	838,625	752,862	732,055	727,300	732,492	727,300
1965	844,987	816,209	762,268	760,061	773,819	773,091
1966	910,034	881,992	844,931	856,631	879,131	873,931
1967	1,084,676	1,036,697	950,032	984,254	1,019,254	1,014,254
1968	1,190,876	1,159,231	1,079,787	1,076,461	1,129,262	1,076,461
1969	1,255,270	1,231,929	1,130,644	1,089,463	1,140,766	1,109,753
1970	1,266,001	1,161,344	1,084,420	1,085,626	1,197,115	1,061,007
1971	1,120,122	1,112,722	1,118,584	1,192,386	1,252,950	1,212,847
1972	1,276,357	1,197,474	1,319,873	1,408,554	1,570,984	1,506,156
1973	1,881,353	1,737,228	1,619,780	1,762,565	1,965,795	1,762,565[1]
1974	2,207,744	1,725,675	1,576,770	1,787,142	1,927,902	1,790,425
1975	1,684,457	1,727,228	1,834,784	1,787,328	2,198,350	2,092,897
1976 (transition quarter)	2,059,767	1,984,396	1,805,000	2,150,755	2,267,081	2,302,126
1976	470,730	463,105	431,905	429,047	428,618	439,107
1977	2,245,442	2,188,442	2,165,047	2,440,778	2,656,096	2,544,078
1978	2,527,622	2,510,820	2,576,371	2,742,402	2,896,535	2,842,936[1]
1979	2,861,744	2,889,556	2,884,720	2,952,191	3,024,316	3,189,976
1980	3,279,873	2,906,935	3,172,430	3,381,030	3,367,757	3,429,381[1]
1981	3,620,358	3,596,131	3,490,447	3,616,447	3,686,447	3,569,406[1]
1982	3,833,687	3,793,470	3,762,483[2]	3,834,958	3,818,710	3,640,186[3]
1983	4,141,142	3,747,170	3,748,771	4,013,450[4]	4,028,591[4]	4,023,969[4]

[1]No enacted appropriation. Authorized under a Continuing Resolution.
[2]Revised request (Reagan).
[3]No enacted appropriation. Authorized under a Continuing Resolution through March 31, 1982.
[4]Includes Supplemental Appropriation.

Percent Growth In Appropriation For NIH and NIAID



Cumulative % Growth Since 1970

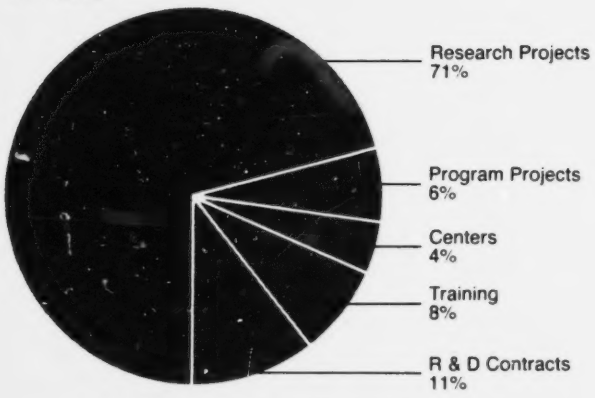
Cumulative % Growth Since 1977

NIAID Mechanisms for Award of Extramural Projects

Support Mechanism	Initiation	Primary Review	Secondary Review	Ongoing Management and Evaluation
Research Grants	Individual Investigator (R01,R22, R23)	DRG Study Section	National Advisory Allergy and Infectious Diseases Council	Renewal Process including use of Annual Progress Reports and new peer review at 3-5 year periods.
Program Project Grants Center Grants	NIAID Solicitation (RFA) (P50) (P01)	Chartered NIAID Committees	National Advisory Allergy and Infectious Diseases Council	Program Officer, Reviews Research Process including Review of Annual Progress Reports and Site Visit Reports. Complete peer review every 3-5 years.
Training and Fellowship Grants	Training Dept (T-32) and Individual Investigator (F-32)	Chartered NIAID Committees (T-32) DRG Fellowship Committee (F-32)	NAAID Council/T-32 NIAID Fellowship Review Group (F-32)	Annual Renewal Process on T-32 includes review of progress reports. Complete peer review at end of 5 years. F-32 not renewable.
Career Awards	Individual Investigator (K04)	DRG Study Section	National Advisory Allergy and Infectious Diseases Council	Not renewable—awarded for 5 years. Annual progress report reviewed.
Asthma and Allergic Diseases Award	Individual Investigator (K07)	Chartered NIAID Committees	National Advisory Allergy and Infectious Diseases Council	Not renewable—awarded for 5 years. Annual progress report reviewed.
Research and Development Contracts	NIAID Solicitation (RFP)	Chartered NIAID Committees	NIAID Research Contract Approval Group	Project Officers; project site visit reports; periodic and annual progress reports; renewal process.

Distribution of the NIAID Extramural Research Budget Fiscal Years 1976 and 1980

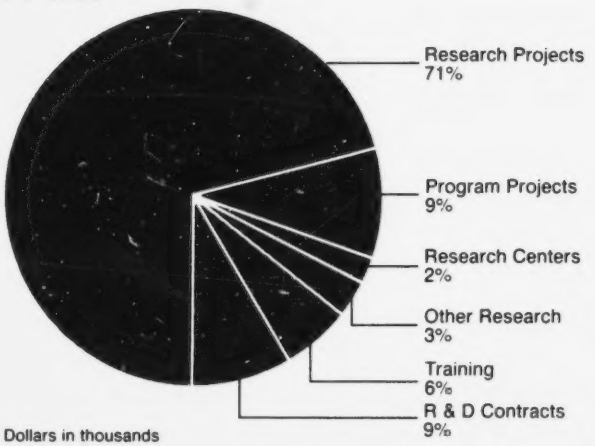
FY 1976



Dollars in thousands

Budget Mechanism	1976 Actual
Research Projects	$66,678
Program Projects	5,371
Centers	3,662
Training Programs	7,809
R & D Contracts	10,638
Total	$94,158

FY 1980

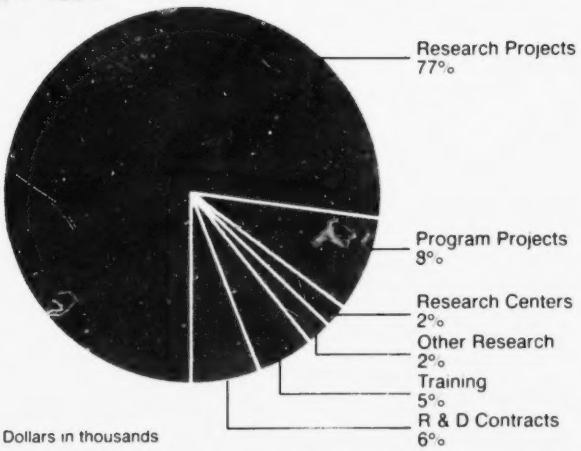


Dollars in thousands

Budget Mechanism	1980 Actual
Research Projects	$117,710
Program Projects	14,967
Research Centers	3,967
Other Research Grants	4,514
Training Programs	9,561
R & D Contracts	15,254
Total	$165,973

Distribution of the NIAID Extramural Research Budget Fiscal Years 1981, 1982 and 1983

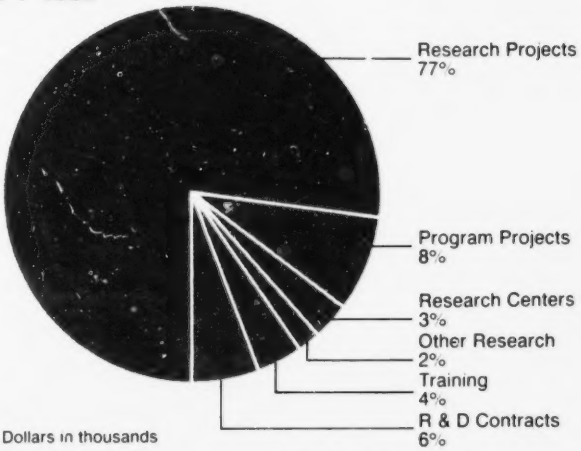
FY 1981



Dollars in thousands

Budget Mechanism	1981 Actual
Research Projects	$135,878
Program Projects	14,444
Research Centers	4,055
Other Research Grants	4,379
Training Programs	8,767
R & D Contracts	11,095
Total	$178,618

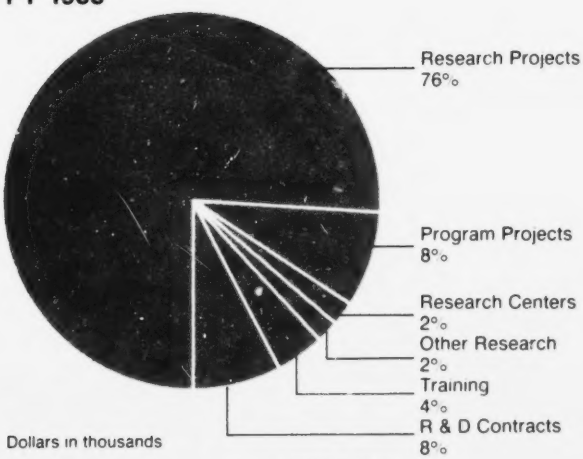
FY 1982



Dollars in thousands

Budget Mechanism	1982 Actual
Research Projects	$138,568
Program Projects	14,420
Research Centers	4,160
Other Research Grants	4,212
Training Programs	7,258
R & D Contracts	10,883
Total	$179,501

FY 1983

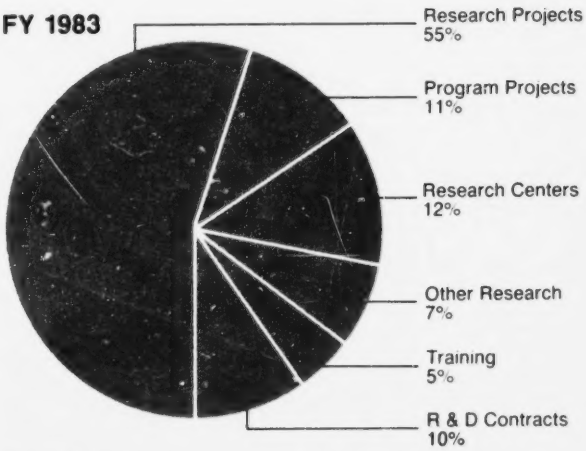


Dollars in thousands

Budget Mechanism	1983 Actual
Research Projects	$163,996
Program Projects	16,634
Research Centers	5,226
Other Research Grants	3,813
Training Programs	8,413
R & D Contracts	16,503
Total	$214,585

Distribution of Extramural Research Budget, NIH

FY 1983



Dollars in thousands

Budget Mechanism	1983 Actual
Research Projects	$1,737,649
Program Projects	357,467
Research Centers	373,369
Other Research Grants	217,953
Training Programs	164,654
R & D Contracts	320,090
Total	$3,171,182

1983 Appropriation Chronology

Dollars in thousands

Recipient	President's Budget	House Allowance	Senate Allowance	Continuing Resolution*	% Change from Pres. Budget
NCI	955,449	981,441	985,711	987,642	+3.4
NHLBI	577,143	620,947	624,542	624,259	+8.2
NIDR	74,462	80,304	77,416	79,292	+6.5
NIADDK	379,422	408,508	415,856	413,492	+9.0
NINCDS	274,505	294,361	297,077	297,064	+8.2
NIAID	246,043	276,376	270,795	279,129	+13.4
NIGMS	345,621	367,009	372,114	369,813	+7.0
NICHD	233,575	251,561	255,749	254,324	+8.9
NIA	84,556	96,104	91,887	93,996	+11.2
NEI	131,550	138,763	144,360	141,901	+7.9
NIEHS	157,448	162,695	166,040	164,867	+4.7
DRR	191,024	227,642	199,967	213,917	+12.0
FIC	10,147	10,147	10,147	10,147	0.0

*Includes Supplemental Appropriation

NIAID Obligations By I/RD, Program Activity, and Function/Mechanism, Fiscal Year 1983

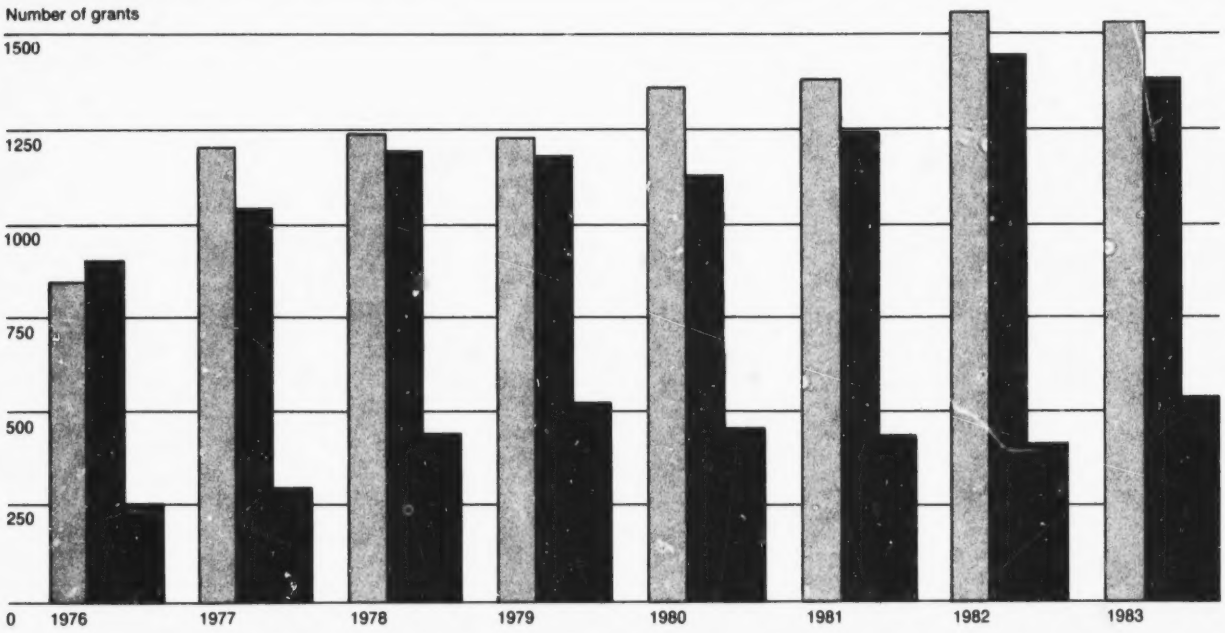
Dollars in thousands

I/RD and program activity	Total	Grants and Contracts						Direct Activities				Program mgt. (ODs)
		R&D Grants				Research Training						
		Projects	Centers	Other	R&D contracts	Indiv.	Inst'l	Disease control	Construction	Research	Other direct*	
NIAID	**278,939**	**180,630**	**5,226**	**3,813**	**16,503**	**1,915**	**6,498**	**—**	**—**	**50,402**	**10,373**	**3,579**
Immunology; immunologic and allergic diseases	86,605	74,439	5,226	1,759	1,489	664	3,028	—	—	—	—	—
Microbiology & infectious diseases	127,980	106,191	—	2,054	15,014	1,251	3,470	—	—	—	—	—
Intramural research	50,402	—	—	—	—	—	—	—	—	50,402	—	—
Direct operations	10,373	—	—	—	—	—	—	—	—	—	10,373	—
Program management	3,579	—	—	—	—	—	—	—	—	—	—	3,579

*Management of extramural programs and some management costs applicable to overall operations.

8

NIAID Trends
Number of Regular Research Grant Applications, Approvals*, and Awards
Fiscal Years 1976-1983



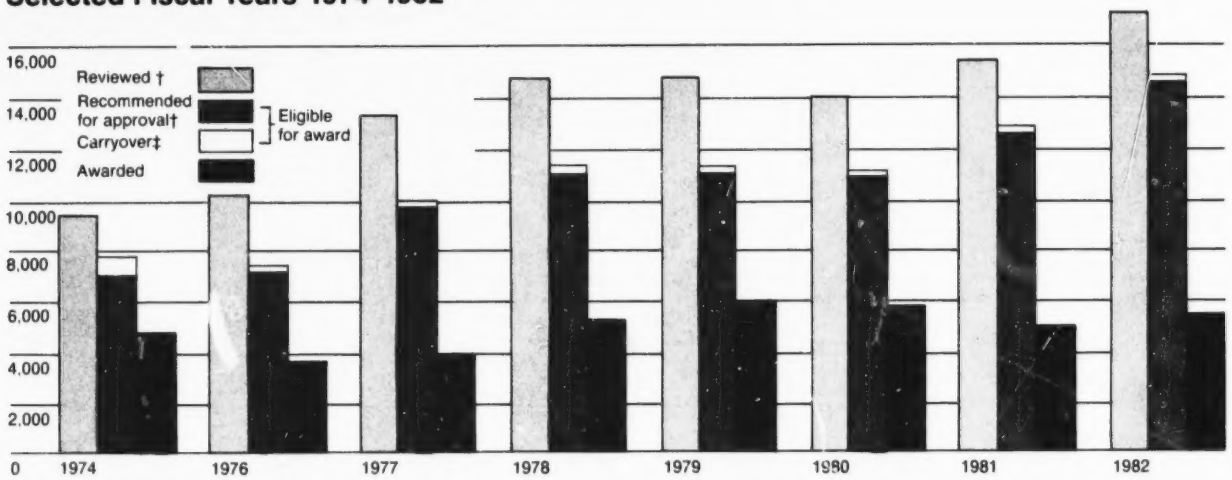
*Approvals include Carryovers (to be consistent with Award Rate Computation Requirements)

Research includes R01's, R22's, R23's, R43's, P01's, and UO1's.

Source: DRG, SAS
Prepared by: Data Control, NIAID

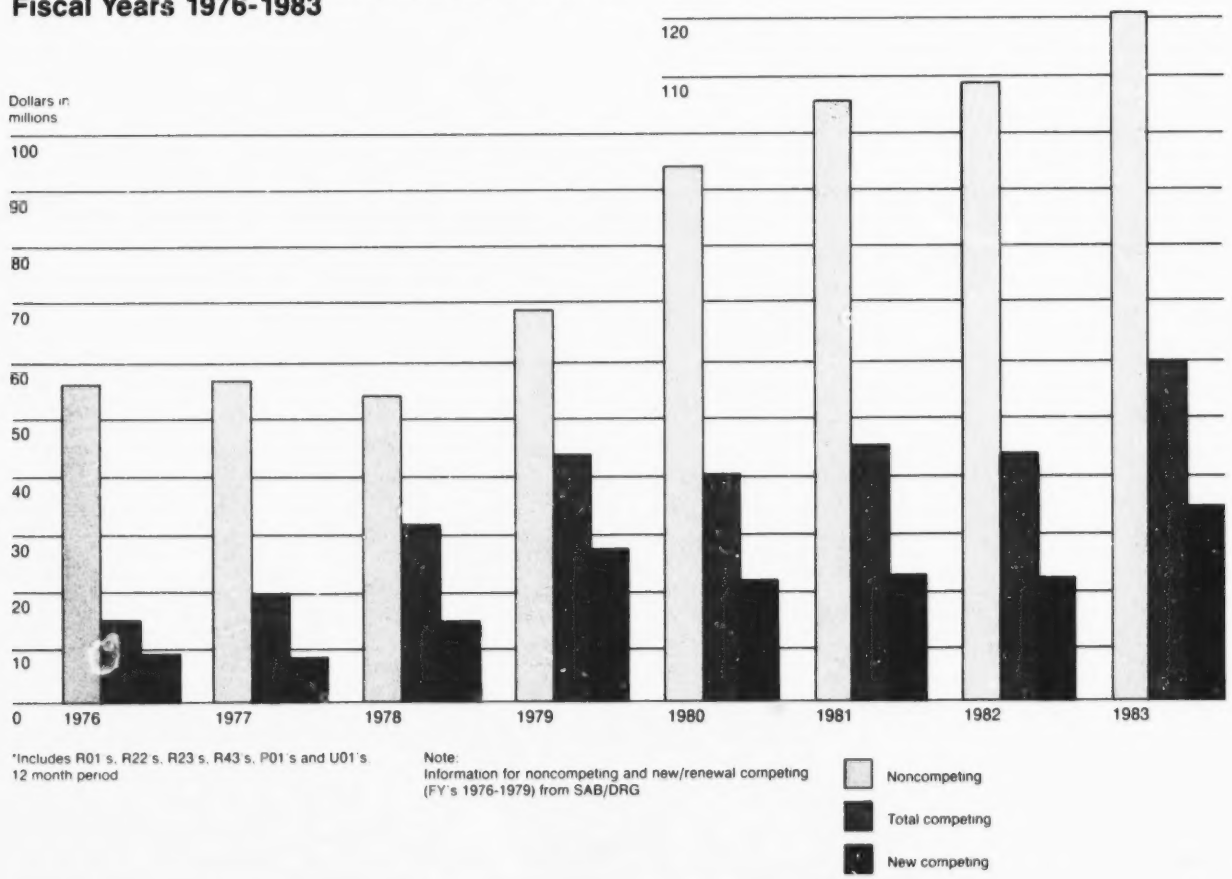
	% Approved as % of Reviewed	% Funded as % of Approved Includes Carryovers
FY 76	79.8	26.8
FY 77	82.7	27.6
FY 78	86.5	36.4
FY 79	89.2	48.6
FY 80	89.8	38.3
FY 81	90.4	34.9
FY 82	92.7	28.6
FY 83	92.6	37.1

Number of Applications for NIH Competing Research Projects Reviewed, Recommended for Approval by Councils, and Awarded, Selected Fiscal Years 1974-1982*



*Excludes NLM. Represents grants coded (except DRR), R22, R23, and P01. Original applications and their amendments for the same fiscal year are counted as one.
†Reviewed and recommended for funding in year shown.
‡Approvals carried over from a prior year and funded in the year shown.

NIAID Competing vs. Noncompeting Research Grants* Fiscal Years 1976-1983



*Includes R01's, R22's, R23's, R43's, P01's and U01's 12 month period

Note:
Information for noncompeting and new/renewal competing (FY's 1976-1979) from SAB/DRG

NIAID Trends
Number of Regular Research Grant Applications, Approvals, and Awards
Fiscal Years 1976-1983

Dollars in thousands

	Reviewed		Council Rec & Carryovers		Funded		Award Rate	
	Number of Grants	Dollar Amount*	Number of Grants	Dollar Amount**	Number of Grants	Dollar Amount**	Number of Grants	Dollar Amount*
FY 76	846	45,073	675	37,554	181	14,957	26.8%	39.8%
FY 77	1,172	65,362	971	57,637	268	19,499	27.6%	33.8%
FY 78	1,255	76,445	1,091	71,420	397	31,059	36.4%	43.5%
FY 79	1,238	85,136	1,104	81,467	537	42,951	48.6%	52.7%
FY 80	1,313	97,999	1,181	96,527	452	39,130	38.3%	40.5%
FY 81	1,374	102,528	1,242	108,958	433	44,713	34.9%	41.0%
FY 82	1,550	124,524	1,437	134,865	411	43,918	28.6%	32.6%
FY 83	1,519	140,653	1,406	155,515	522	59,910	37.1%	38.5%

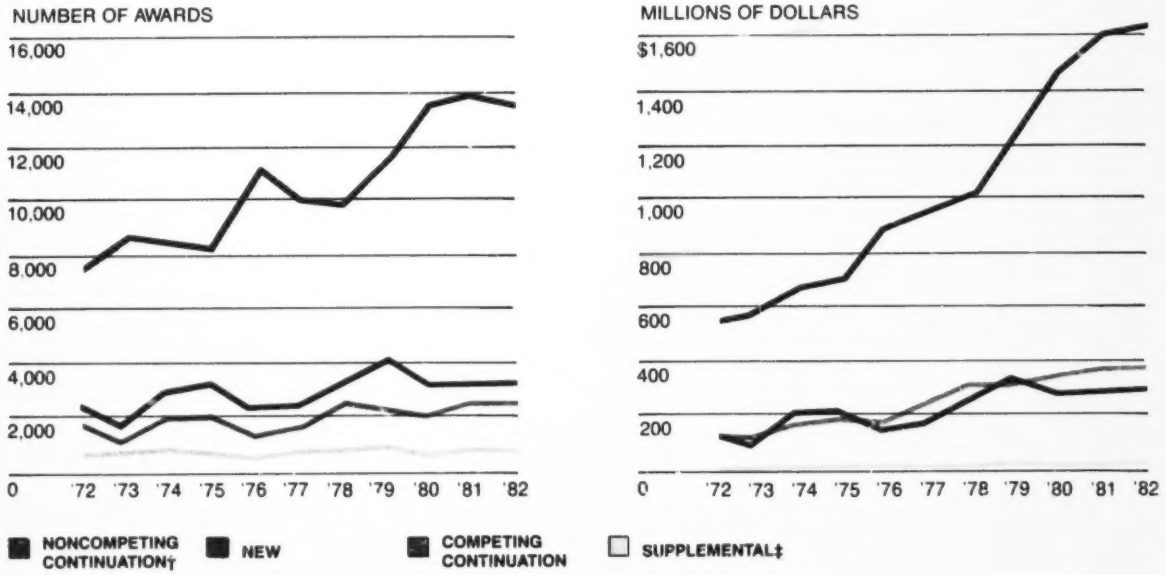
*Direct cost only
**Total cost (direct and indirect)

National Institute of Allergy and Infectious Diseases Research Project Grants
Funded-Unfunded

Amounts in thousands

	1980 Actual		1981 Actual		1982 Actual		1983 Actual	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Funded	1,453	132,494	1,520	150,322	1,423	152,988	1,531	180,630
Noncompeting	1,001	93,364	1,087	105,609	1,012	109,070	1,009	120,720
Competing	452	39,130	433	44,713	411	43,918	522	59,910
Percent Funded								
Competing	38.3%		34.9%		28.6%		37.1%	
Priority Score	204		178		162		166	
Unfunded Competing	729	57,397	809	64,246	1,026	90,947	884	95,605

NIH Research Grants by Type,
Fiscal Years 1972-1982*



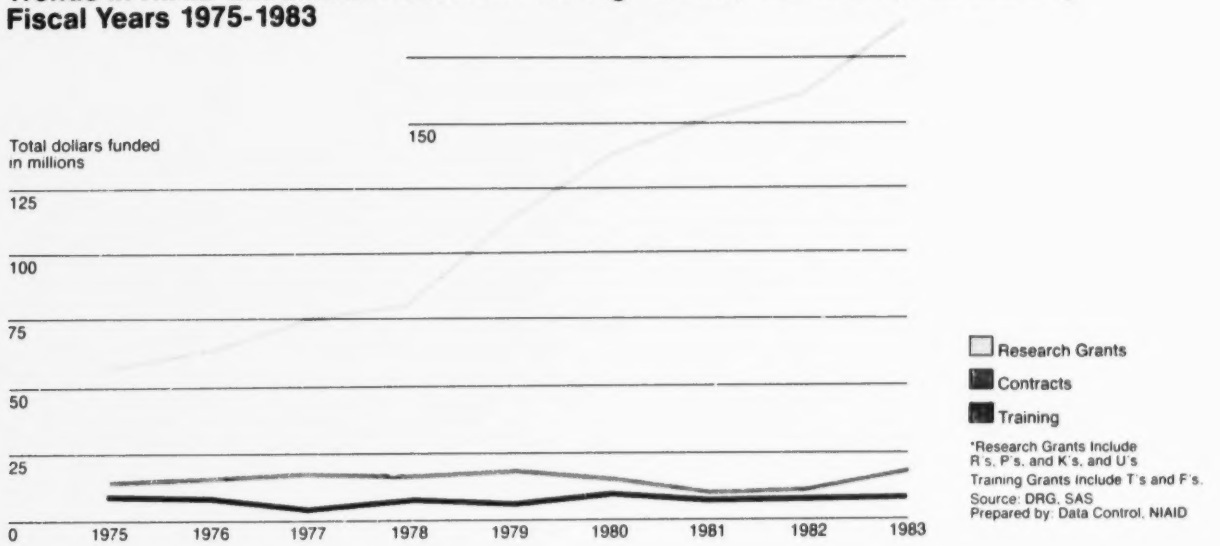
*Excludes NLM
†Includes all BRS grants (S07) of which 43 for $1.3 million were new grants in 1980.
‡Each supplemental grant is counted separately.

Award Rates for NIH Competing Research Projects by NIH Component Fiscal Years 1977-1982

NIH component	Number awarded						Award rates*						
	1977	1978	1979	1980	1981	1982	1970	1977	1978	1979	1980	1981	1982
Total	**3,840**	**5,200**	**5,944**	**4,785**	**5,109**	**5,027**	**50.2%**	**38.7%**	**45.3%**	**51.6%**	**42.3%**	**39.2%**	**34.7%**
NIA	132	85	214	131	118	175	175	59.0	34.1	48.5	32.0	23.4	35.6
NIAID	268	397	537	452	433	411	56.4	27.6	36.4	48.6	38.3	34.9	28.6
NIADDK	641	685	769	698	759	645	50.6	44.5	42.1	50.0	42.8	41.0	32.5
NCI	658	886	901	773	814	748	43.7	37.8	43.4	43.9	39.0	35.8	29.9
NICHD	290	453	461	348	453	439	50.3	33.3	45.7	44.8	36.3	39.2	35.0
NIDR	107	144	131	97	143	108	26.7	44.0	39.5	45.5	37.7	45.1	39.3
NIEHS	116	119	91	87	113	104	43.6	55.2	45.2	41.0	35.1	47.5	38.0
NEI	218	350	301	217	304	273	56.2	55.3	64.6	65.2	52.2	52.4	48.4
NIGMS	446	788	1,020	890	711	859	20.1	32.9	46.7	58.2	58.3	40.1	38.9
NHLBI	729	759	942	589	774	765	72.8	45.5	46.7	55.4	33.8	40.7	37.2
NINCDS	235	534	577	503	487	500	79.0	26.6	53.0	62.6	52.9	40.6	34.9

Number awarded as a percent of number eligible (recommended for approval + carryover).

Trends in NIAID Extramural Research Funding: Grants,* Contracts, and Training Fiscal Years 1975-1983



Trends in NIAID Research Project Grants, Contracts, and Training Fiscal Years 1975-1983 Dollars Funded

Dollars in thousands	Research		RCA & RCDA		Total R's & P's, K's		Contracts		Training—F's		Training Total	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
FY75	1,129	64,543	99	2,513	1,228	67,056	157	12,911	230	3,045(T)	75	5,081
										(F)	230	3,045
											305	8,126
FY76 (12 mo.)	1,120	70,586	94	2,382	1,214	72,968	136	11,506	228	4,044(T)	51	3,271
										(F)	228	4,044
											279	7,315
FY77	1,031	76,401	103	3,284	1,134	79,685	128	15,841	197	4,754(T)	22	1,429
										(F)	197	4,754
											219	6,183
FY78	1,066	88,625	120	4,165	1,186	92,790	139	17,333	228	6,838(T)	17	1,096
										(F)	228	6,838
											245	7,934
FY79	1,305	112,054	120	4,185	1,425	116,239	124	15,678	159	2,179(T)	81	5,767
										(F)	159	2,179
											240	7,946
FY80	1,453	132,494	108	3,973	1,561	136,467	97	15,254	113	2,209(T)	83	7,352
										(F)	113	2,209
											196	9,561
FY81	1,520	150,322	92	3,377	1,612	153,699	78	11,095	106	2,069(T)	70	6,698
										(F)	106	2,069
											176	8,767
FY82	1,423	152,968	89	3,326	1,512	156,314	70	10,883	92	1,592(T)	65	5,666
										(F)	92	1,592
											157	7,258
FY83	1,531	180,630	78	2,965	1,609	183,595	71	16,503	102	1,915(T)	66	6,498
										(F)	102	1,915
											168	8,413

Growth in Indirect Costs: NIAID Research Projects[1] Fiscal Years 1976-1983

Dollars in thousands

	1976[2]	1977	1978	1979	1980	1981	1982	1983
Total Costs:	$69,337	$74,914	$85,701	$112,055	$132,677	$150,599	$153,173	$180,671
Direct costs:	49,687	53,567	61,363	79,993	92,963	104,122	104,797	121,926
Indirect costs:	19,650	21,347	24,338	32,062	39,714	46,477	48,376	58,745
(% of direct costs)	(39.5%)	(39.9%)	(39.7%)	(40.1%)	(42.7%)	(44.6%)	(46.2%)	(48.2%)
Total Noncompeting:	$54,375	$55,391	$54,642	$69,091	$93,547	$105,866	$109,255	$120,761
Direct costs:	38,577	39,356	38,560	48,292	64,766	72,710	73,739	80,816
Indirect costs:	15,798	16,035	16,082	20,799	28,781	33,176	35,516	39,945
(% of direct costs)	(41.0%)	(40.7%)	(41.7%)	(43.1%)	(44.4%)	(45.6%)	(48.2%)	(49.4%)
Total Competing:	$14,962	$19,523	$31,059	$42,964	$39,130	$44,713	$43,918	$59,910
Direct costs:	11,110	14,211	22,803	31,701	28,197	31,412	31,058	41,110
Indirect costs:	3,852	5,312	8,256	11,263	10,933	13,301	12,860	18,800
(% of direct costs)	(34.7%)	(37.4%)	(36.2%)	(35.5%)	(38.8%)	(42.3%)	(41.4%)	(45.7%)

[1]Includes R01 s, R21 s, R22 s, R23 s, R43 s, P01 s, and U01 s
[2]12 month period

Indirect Costs Awarded for NIH Research Grants by Type of Performer, Fiscal Years 1974-1982*

Dollars in thousands

	1974			1976			1978			1980			1982		
Type of Performer	Total Cost	Indirect Cost Amount	Percent	Total Cost	Indirect Cost Amount	Percent	Total Cost	Indirect Cost Amount	Percent	Total Cost	Indirect Cost Amount	Percent	Total Cost	Indirect Cost Amount	Percent
Total	$991,832	$235,610	23.8%	$1,195,227	$304,871	25.5%	$1,536,924	$404,771	26.3%	$2,036,857	$567,005	27.8%	$2,278,913	$660,895	29.0%
Public	429,004	98,936	23.1	507,472	120,612	23.8	653,343	155,678	23.8	879,188	217,728	24.8	981,713	249,503	25.4
Private	562,828	136,674	24.3	687,755	184,259	26.8	883,581	249,094	28.2	1,157,670	349,277	30.2	1,297,200	411,192	31.7
Higher education	802,318	193,512	24.1	962,955	247,487	25.7	1,241,715	328,884	26.5	1,647,852	464,251	28.2	1,825,448	531,206	29.1
Public	403,915	94,129	23.3	482,325	116,030	24.1	625,622	150,722	24.1	840,629	209,848	25.0	937,987	240,125	25.6
Private	398,403	99,383	24.9	480,630	131,457	27.4	616,093	178,162	28.9	807,223	254,404	31.5	887,461	291,061	32.8
Research institutes	78,524	20,833	26.5	104,092	30,559	29.4	136,233	42,162	30.9	191,060	60,653	31.7	229,527	76,891	33.5
Public	1,663	358	21.5	1,891	404	21.4	2,008	464	23.1	4,732	1,261	26.7	2,082	554	26.6
Private	76,861	20,474	26.6	102,200	30,155	29.5	134,224	41,697	31.1	186,329	59,392	31.9	227,445	76,336	33.6
Independent hospitals†	89,298	17,722	19.8	102,650	22,467	21.9	122,361	27,728	22.7	149,215	34,501	23.1	188,363	42,583	25.3
Public	18,272	3,713	20.3	17,977	3,449	19.2	18,080	3,649	20.2	23,237	5,692	24.5	27,647	7,271	26.3
Private	71,026	14,009	19.7	84,673	19,017	22.5	104,281	24,079	23.1	125,978	28,809	22.9	140,707	35,322	25.1
Other	21,692	3,544	16.3	25,531	4,359	17.1	36,615	5,998	16.4	48,730	7,599	15.6	56,586	10,006	18.0
Public	5,154	736	14.3	5,279	728	13.8	7,633	842	11.0	10,590	927	8.8	13,998	1,554	11.1
Private	16,538	2,808	17.0	20,251	3,630	17.9	28,983	5,156	17.8	38,140	6,673	17.5	41,587	8,452	20.3

*Excludes NLM, RCPAs, Cancer control, and BRS.
†Includes government hospitals and those not owned by institutions shown above.
NOTE: Represents indirect costs as of end of fiscal year shown. Unobligated balances applied to the following year's awards are distributed between direct and indirect costs. Other time series on indirect costs, with different exclusions and different cutoff dates, have been distributed.

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NIAID Accelerated Development of New Vaccines Program

The purpose of this program is to develop a clearly identified, recognized, and coordinated approach to the further conquest of vaccine preventable diseases. The knowledge and technologies which have been emerging from basic research now provide new opportunities to solve problems that have been insoluble with earlier technology and knowledge. The incentive for expanded efforts lies in recombinant DNA and hybridoma technologies and in the better understanding of the workings of the immune system. Such new knowledge will permit radically different approaches to the problems of immunization. The goal of the initiative is to expedite the availability of needed vaccines through the selection of a few candidate vaccines for intense effort so as to bring these vaccines into use at least several years earlier than might otherwise have been the case. Pending consideration of the independent recommendations of the Institute of Medicine, which is now developing a model system for setting priorities, NIAID has targeted the following diseases, from among its significantly larger total vaccine research portfolio, for prevention by immunization with new or improved vaccines within the next 10 years:

- Meningitis
  - ***Hemophilus influenzae***
  - Group B Streptococci
- Gonorrhea
- Diarrhea
  - Cholera
  - Dysentery
  - Rotaviruses
  - Typhoid
- Bronchiolitis, croup, and pneumonia in children
  - Parainfluenza viruses
  - Respiratory syncytial viruses
- Whooping cough
- Influenza
- Hepatitis
  - Type A
  - Type B (2nd generation)
- Chickenpox
- Genital Herpes
- Malaria

In FY 1983 this program contained 69 projects at $9.133 million.

Major Clinical Trials Underway or Planned in FY 1984

Title	Description
1. Clinical Evaluation of Live Varicella (Chickenpox) Vaccine in Children.	Performance of studies to evaluate varicella vaccine(s) produced by commercial manufacturer(s). The vaccine will be tested in immunosuppressed children who are at high risk, i.e., those with leukemia or other malignant diseases.
2. Treatment of Primary Genital Herpes with Interferon	A controlled double-blind clinical trial to determine the efficacy of human leukocyte interferon in the treatment of primary genital herpes infections.
3. Clinical Trials on Efficacy of Antivirals for the Treatment of Severe Herpes Virus Infection	Clinical evaluation of experimental drugs in serious viral infections. Protocols will include studies on herpes encephalitis, neonatal herpes, herpes zoster and herpes simplex in the immunosuppressed. Drugs under current study will include adenine arabinoside, adenine arabinoside monophosphate and acyclovir as well as other promising antivirals.
4. Treatment of Juvenile Laryngeal Papilloma with Interferon	Perform a controlled efficacy trial of interferon in the treatment of laryngeal papilloma. This is essential to determine the effects of interferon on tumor regression and recurrences.
5. Treatment of Condyloma Acuminatum (Genital Warts) with Interferon	This clinical trial will evaluate the use of several types of interferon in both local and systemic treatment modes as a treatment for genital warts.
6. Efficacy Trial of *Haemophilus influenzae* Type b Vaccine in a High Risk Infant Population	Conduct a double-blind randomized trial to determine the efficacy of a new *Haemophilus influenzae* type b vaccine in a high risk infant population. Meningitis due to *H. influenzae* strikes very young children and causes significant morbidity and mortality.
7. Gonococcal Vaccine	Conduct a trial of two vaccine preparations of the principal outer membrane protein. This is essential to determine the effectiveness of the vaccine as a method of prevention of gonorrhea and its sequelae.
8. Prevention of Prematurity by Detection and Treatment of Gestational Genitourinary Infections	Multicenter clinical trial co-funded with NICHD to relate genitourinary infections and the organism(s) causing them, to low birth weight and gestational age.
9. Immunotherapy of Adult Asthma	Multicenter, double-blind, placebo controlled clinical trial to test the efficacy of immunotherapy in allergic asthmatics. Although immunotherapy (allergy shots) is frequently given to asthmatic patients who have allergies, definitive proof that they help in this condition has not been established.

The total 1984 estimate for all clinical trials is $9,379,000 which includes support for major clinical trials as well as many investigator initiated projects.

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NIAID has become the principal source of funding for U.S. civilian investigators in parasitology, microbiology, and vector-borne diseases. NIAID is also responsible for the only Federal laboratories with a primary commitment to basic research on these conditions. Satisfactory vaccines, drugs, and vector control technologies do not exist to prevent or treat most tropical diseases. Many of these diseases persist in the USA or its territories (e.g., schistosomiasis and dengue in Puerto Rico). In other instances the potential for reintroduction and epidemics continues. U.S. military and civilian populations traveling or residing in endemic areas are also exposed to these conditions which frequently threaten military and industrial capability. Tourism, an important source of revenue in the U.S. and overseas, poses health threats for unprepared populations.

The Revolution in Biotechnology has resulted in powerful new research tools which are leading to a better understanding of disease agents and the immune response they provoke in animal and human hosts, an essential prerequisite to the development of effective vaccines and improved drugs. Other Federal agencies (DOD, USAID, CDC) depend upon the NIAID basic research in tropical medicine to fuel their more targeted and applied research, prevention, and treatment programs. The implications of hybridoma, recombinant DNA and antigen synthesis technology for health and agricultural markets around the world is profound and unexplored.

The U.S. Government has made bilateral (e.g., Egypt, Israel, China, Japan, India, Italy, Mexico, Spain) and multilateral (WHO/World Bank) commitments to collaborate in research and training in Tropical Medicine. Since FY 1982, NIAID has administered a five-year $6 million USAID project on the "Epidemiology and Control of Vector-Borne Diseases in Egypt and Israel." NIAID collaborates closely with CDC, FDA, Army, Navy, USAID, WHO, and voluntary agencies in the administration of its Tropical Medicine and International Research Activities.

The WHO/UNDP/World Bank Special Programme for Tropical Disease Research (TDR) has targeted six priority tropical diseases as international health problems: (1) filariasis; (2) leishmaniasis; (3) leprosy; (4) malaria; (5) schistosomiasis; and (6) trypanosomiasis. While not a discrete entity within NIAID, we have found that reporting these six tropical diseases separately facilitates communication and coordination with WHO and other international agencies. In FY 1983, research in these tropical diseases exceeded 63 percent of the total NIAID Tropical Medicine Program. In addition to the six TDR diseases, the NIAID Tropical Medicine Program includes additional infectious diseases in which international exchange of scientific information and collaboration is critical to the domestic research effort.

General parasitology consists of research on the remaining parasites of importance to human health, parasitology research training, and basic research projects which could not be assigned easily to any one of the six targeted (TDR) diseases. Basic research in parasitology is a prerequisite to further understanding and advances in the prevention or control of the five parasitic diseases of TDR. Indeed, the Public Health Service, Army, Navy, USAID, and WHO disease-oriented initiatives have derived from and will continue to rely on basic research breakthroughs to achieve their goals of vaccine and drug development or vector control. General parasitology, including research training, comprised 12.4 percent of the 1983 Tropical Medicine Program. Together, general parasitology and the five parasitic diseases of TDR accounted for $24,166,773 (72.3%) of Tropical Medicine.

Tropical virology (5.4%) includes research projects and training awards in arboviruses, rabies, and viral agents of public health importance (e.g. Lassa fever) which are not endemic to the USA. During FY 1983, tropical bacteriology (5.7%) awards were heavily concentrated on cholera and related organisms, tuberculosis, leptospirosis, and mycobacteria other than leprosy, and yersinia. Although WHO has established a Global Diarrheal Disease Control Program with a major research component in epidemiology, improved drugs, and vaccine development, NIAID related activities in viral and bacterial diarrhea other than cholera are not a formal part of the Tropical Medicine Program.

Coccidioidomycosis and histoplasmosis contribute the bulk of the tropical mycology program (2.2%).

The rickettsia program (5.7%) is modest in size, but is the only program area in which intramural research expenditure exceeds extramural awards. The vector control program (3.5%) by contrast, consisted of 19 extramural grants to study the arthropod, arachnoid, and mollusk vectors of human viral, rickettsial, and trematode diseases compared to our research project.

In 1980 NIAID phased out the International Centers for Medical Research (ICMR) program which had consisted of five NIAID-supported units abroad, maintaining a pool of U.S. tropical disease investigators, which had been in operation since 1960. NIAID has superseded the ICMR Program with four award mechanisms which should provide greater flexibility and cooperation between U.S. tropical medicine specialists and scientists in developing countries. They are: (1) the International Collaboration in Infectious Diseases Research (ICIDR) Program; (2) the Tropical Disease Research Units (TRU); (3) the International Tropical Disease Research (ITDR) Fellowships; and (4) the Senior International Fellowships (SIF), with emphasis in Tropical Diseases.

The ICIDR program differs from the ICMR in several respects. Perhaps the most important is the emphasis given to developing a peer relationship between the U.S. institution or investigators and their foreign counterparts. The program focus is on infectious diseases, and at least 70 percent of the award must be spent overseas. The ICIDR program has two parts. Program project grants (Part A) are for collaborative research of a multi-disciplinary nature in a series of related areas. Exploratory project grants (Part B) are between individual scientists in a single research discipline.

For many years intramural laboratories, particularly the Laboratory of Parasitic Diseases and the Rocky Mountain facilities, have functioned as NIAID facilities committed to basic research in tropical diseases. The Tropical Disease Research Unit (TRU) Program is designed to extend NIAID support to university-based centers of excellence in tropical medicine research, in an attempt to generate new knowledge, strengthen U.S. institutions, and provide research training for young U.S. and foreign scientists. TRU awards have been made to the Robert B.

NIAID Combined Intramural and Extramural Tropical Medicine Program: Fiscal Year 1983

	EXTRAMURAL				INTRAMURAL		COMBINED	
	Grants		Contracts					
Program Area	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Tropical Diseases								
Filariasis	15	$ 1,492,683	–	$ –	3	$ 558,067	18	$ 2,050,750
Leishmaniasis	20	2,706,473	–	–	4	1,400,176	24	4,106,649
Leprosy	9	1,182,926	3	196,156	–	–	12	1,379,082
Malaria	21	2,121,749	–	–	6	1,828,631	27	3,950,380
Schistosomiasis	32	3,726,200	–	–	5	871,971	37	4,598,171
Trypanosomiasis	39	4,784,802	–	–	4	523,188	43	5,307,990
Subtotal	136	$16,014,833	3	$196,156	22	$5,182,033	161	$21,393,022
Training	12	$ 202,168	–	$ –	–	$ –	12	$ 202,168
Career Develop.	2	72,780	–	–	–	–	2	72,780
Subtotal	14	$ 274,948	–	$ –	–	$ –	14	$ 274,948
General Parasitology								
Cestodes	3	$ 291,939	–	$ –	–	$ –	3	$ 291,939
Nematodes	16	1,366,561	–	–	1	110,451	17	1,477,012
Protozoa	12	908,842	–	–	5	1,134,120	17	2,042,962
Trematodes	1	121,441	–	–	–	–	1	121,441
Multiple	–	–	–	–	–	–	–	–
Training	2	181,626	–	–	–	–	2	181,626
Career Develop.	1	37,856	–	–	–	–	1	37,856
Subtotal	35	$ 2,908,265	–	$ –	6	$1,244,571	41	$ 4,152,836
General Tropical Medicine								
Rickettsia	10	$ 862,284	–	$ –	4	$1,038,304	14	$ 1,900,588
Bacteriology	17	1,777,363	–	–	1	141,332	18	1,918,695
Mycology	7	752,519	–	–	–	–	7	752,519
Virology	16	1,772,455	–	–	1	29,500	17	1,800,955
Vector Pathogens	11	956,859	–	–	1	220,901	12	1,177,760
Training	1	19,150	–	–	–	–	1	19,150
Career Develop.	1	41,148	–	–	–	–	1	41,148
Subtotal	63	$ 6,181,778	–	$ –	7	$1,430,037	70	$ 7,610,815
GRAND TOTAL	248	$25,379,824	3	$196,156	35	$7,856,641	286	$33,432,621

Brigham Hospital (Harvard) and Case Western Reserve University.

The ITDR Fellowship program was initiated in 1979 with NIAID funds to provide a limited number of postdoctoral fellowships for advanced training in tropical disease research in the USA for scientists from developing countries. As applications are particularly encouraged from countries without NIH nominating committees, the TDR Programme and WHO regional and country offices have cooperated in identifying and screening candidates, and funding travel costs of successful candidates nominated by WHO. In FY 1983 a Chinese and Egyptian scientist were awarded ITDR fellowships for research training in schistosomiasis.

The Senior International Fellowship (SIF), with an emphasis in Tropical Diseases, is a special competition within a broader SIF program for mid-career and senior U.S. scientists to spend 3-12 months in cooperative research projects on tropical medicine outside the USA. There were no NIAID-funded fellowships in FY 1983. Both the SIF and ITDR programs are administered by the Fogarty International Center.

During FY 1983 NIAID made 18 competing foreign awards totaling $962,728 to scientists in 7 countries.

NIAID Competing Foreign Awards: Fiscal Year 1983

Country	Grant		Contract	Total	
	Project	Training		No.	Amount
Australia	$391,039 (6)	—	—	6	$391,039
Canada	191,620 (2)	—	—	2	191,620
Finland	—	—	$27,431 (1)	1	27,431
France	31,350 (1)	21,468 (1)	—	2	52,818
Israel*	192,540 (4)	—	—	4	192,540
Netherlands	—	—	$0 (2)	2	0
Switzerland	34,389 (1)	—	—	1	34,389
United Kingdom	36,662 (1)	36,283 (3)	—	4	72,945
TOTALS	$877,600 (15)	57,751 (4)	$27,431 (1)	22	$962,782

*Excludes AID Egypt $712,602
*Excludes AID Israel 390,050

NIAID International Collaboration in Infectious Diseases Research (ICIDR) Program and Tropical Disease Research Units (TRU): Fiscal Year 1983

ICIDR Program

Part A. (Program Proj. Grants)

U.S. University/ Principal Invest.	Foreign Institution/ Country	Research Interest	Estimated Budget
Harvard School of Public Health (Dr. T. H. Weller)	Federal University of Bahia, *Brazil*	Chagas' Disease in Brazil	$ 255,813
University of Illinois (Dr. K. C. Nelson)	Chiang Mai University, *Thailand*	Immunology and Epidemiology of Leprosy	482,557
Cornell University Medical College (Dr. T. C. Jones)	Federal University of Bahia, Brazil and University of Brasilia, *Brazil*	Leishmaniasis Basic and Applied Research in Protozoan Diseases	726,645
Michigan State University (Dr. J. F. Williams)	Central Laboratory, Ministry of Health, Khartoum, *Sudan*	Schistosomiasis Collaborative Research on Parasitic Diseases in Sudan	335,227
Tulane School of Public International Research in Infectious Diseases (Dr. T. C. Orihel)	COLCIENCIAS Cali, *Colombia* and Institut Francais d'Haiti, Port-au-Prince, *Haiti*	Filariasis in Haiti and Colombia Trypanosomiasis in Colombia	532,147
		Subtotal Part A	$2,332,389

Part B. Exploratory Development Grants*

University of Washington (Dr. T. M. Buchanan)	National School of Biological Sciences, National Polytechnic Inst., Mexico City, *Mexico*	Leprosy	40,882
Albert Einstein College (Dr. B. R. Bloom)	National Institute of Dermatology, Caracas, *Venezuela*	Leprosy	70,422
Harvard School of Public Health (Dr. W. F. Piessens)	National Institutes of Health, Jakarta, *Indonesia*	Filariasis	138,906
Univ. of Massachusetts (Dr. G. C. Coles)	Univ. of Nairobi, Nairobi, *Kenya*	Schistosomiasis	66,401
		Subtotal Part B	$316,611

*ICIDR Part B Awards included in individual diseases.

NIAID Tropical Disease Research Unit (TRU) Program: Fiscal Year 1983

U.S. University/ Principal Invest.	Research Interest	Estimated Budget
Robert Breck Brigham Hospital (Dr. J. David)	Immunology of four Parasitic Diseases of Man	$ 363,001
Case Western Reserve University (Dr. A. Mahmoud)	Multidisciplinary in Parasitic Infections (Schistosomiasis)	431,130
	Subtotal TRU	$ 794,131
	GRAND TOTAL	$3,443,131

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NIH and NIAID Obligations for Training
Fiscal Years 1978-1983

Dollars in millions

	Fiscal Year					
	1978	1979	1980	1981	1982	1983
NIH	143.9	143.7	176.4	175.2	150.5	164.7
NIAID	8.1	7.9	9.6	8.8	7.3	8.4

NIAID Institutional National Research Service Awards (T32, T35)
Fiscal Years 1978-1983

Dollars in thousands

	Fiscal Year					
	1978	1979	1980	1981	1982	1983
Number	86	81	83	70	65	66
FTTP*	410	387	409	377	370	377
Amount	5,870	5,767	7,352	6,698	5,666	6,498

*Full-time training positions

NIAID Institutional National Research Service Awards
Fiscal Year 1983

By program

Program	Number of Awards			Number of Full-Time Training Positions Supported in FY 1983	
	Reviewed	Approved	Awarded	Predoctoral	Postdoctoral
IAIDP	17	17	9	65	104
MIDP	22	21	14	81	127
TOTALS	39	38	23	146	231

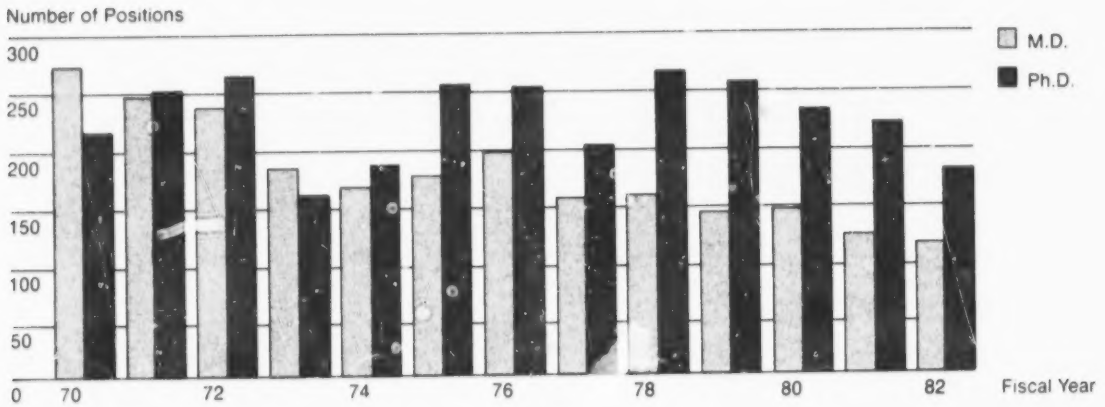
NIAID Full-Time Training Positions
Fiscal Years 1978-1983

By type of training

	Fiscal Year					
	1978	1979	1980	1981	1982	1983
Predoctoral	134	123	137	149	150	146
Postdoctoral*	434	423	385	334	312	333
Total	568	546	522	483	462	479

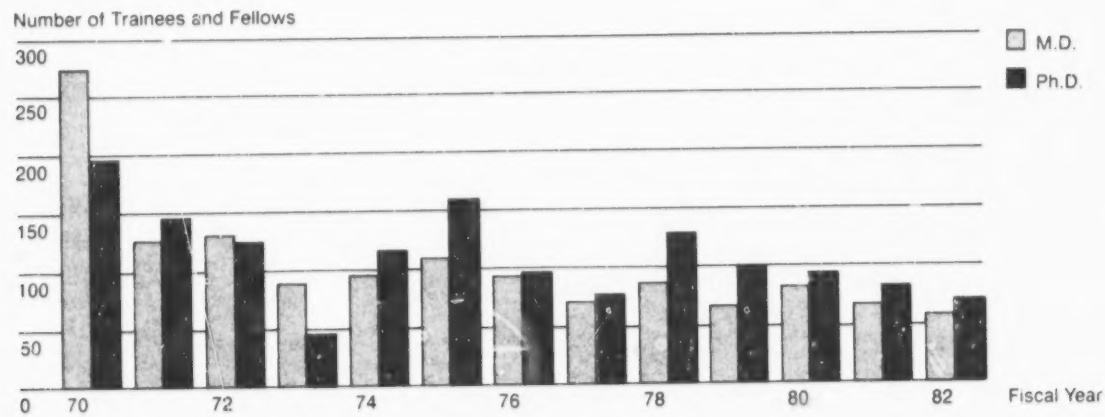
*Includes both NRSA postdoctorals and NIAID fellows, M.D.'s and Ph.D.'s

Number of NIAID Postdoctoral Training and Fellowship Positions



Number of NIAID Postdoctoral Trainees and Fellows

By Fiscal Year of First Appointment



NIAID Trainee and Fellowship Positions Supported
Fiscal Year 1982

By discipline

	Number of Predoctorals and Postdoctorals on NRSA Awards			Number of Postdoctoral Fellows	
	Predoctorals	Postdoctorals			
		M.D.	Ph.D.	M.D.	Ph.D.
Bacteriology/Mycology	37	1	19	—	14
Immunology	59	27	51	17	23
Virology	17	2	13	—	12
Infectious Diseases	—	65	—	4	—
Genetics	1	—	1	—	4
Parasitology	15	—	19	1	4
Molecular Biology	3	—	6	—	5
Other Biomedical Sciences*	22	6	9	2	6
Total	154	101	118	24	68

*Biochemistry, Physiology, Chemistry, Anatomy, and Pathology

Number of Ph.D.'s Awarded in Biomedical Sciences

NIAID Research Career Development Awards
Fiscal Years 1978-1983

Dollars in thousands

	Fiscal Year					
	1978	1979	1980	1981	1982	1983
Number	120	120	108	92	89	78
Amount	4,165	4,185	3,973	3,377	3,326	2,965

Distribution of Grants, Contracts, and Training: FY 1983

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- $10,000,000 and over
- 9,999,000—1,000,000
- 999,000—100,000
- 99,000—0

NIAID FY 1983 Grants—Geographical Distribution
PART 1: DOMESTIC

Dollars in thousands

State Institution	Total	Research Projects (R01, R21, R22, R23, R43, P01, U01)	Centers (P50)	Other Research (R13, R09, S06, K's)	Fellowships (F32, F33)	Training (T32, T35)	Contracts (N01, Y01)
Alabama							
Southern Research Institute	104	104	0	0	0	0	0
University of Alabama in Birmingham	2,960	1,756	0	122	0	321	761
University of South Alabama	793	751	0	41	0	0	0
Subtotal	3,857	2,612	0	164	0	321	761
Arizona							
University of Arizona	128	122	0	6	0	0	0
Subtotal	128	122	0	6	0	0	0
Arkansas							
University of Arkansas Medical Sciences	89	89	0	0	0	0	0
Subtotal	89	89	0	0	0	0	0
California							
Agouron Institute	132	132	0	0	0	0	0
American Mosquito Control Association	27	27	0	0	0	0	0
Beckman Research Institute/City of	193	193	0	0	0	0	0
Becton, Dickinson Monoclonal Center	49	49	0	0	0	0	0
California Institute of Technology	1,381	1,381	0	0	0	0	0
California State Dept of Health Services	203	203	0	0	0	0	0
California State University Long Beach	89	89	0	0	0	0	0
City of Hope National Medical Center	40	40	0	0	0	0	0
Codon	71	0	0	0	0	0	0
Helicon Foundation	66	66	0	0	0	0	0
Institute for Medical Research Santa Clara	97	97	0	0	0	0	0
Kaiser Foundation Research Institute	125	125	0	0	0	0	0
La Jolla Cancer Research Foundation	136	136	0	0	0	0	0
Los Angeles County Harbor—UCLA Med	963	322	0	0	21	0	621
Medical Biology Institute	624	624	0	0	0	0	0
Medical Research Institute	58	58	0	0	0	0	0
Palo Alto Medical Research Foundation	565	543	0	0	23	0	0
Salk Institute for Biological Studies	723	653	0	53	18	0	0
Scripps Clinic and Research Foundation	7,752	7,061	370	78	18	225	0
SRI International	199	199	0	0	0	0	0
Stanford University	6,155	5,586	0	39	147	0	383
University of California	102	102	0	0	0	0	0
University of California Berkeley	3,104	2,305	0	85	36	0	677
University of California Davis	767	767	0	0	0	0	0
University of California Irvine	790	690	0	81	19	0	0
University of California Los Angeles	5,180	3,426	734	47	53	198	294
University of California Riverside	237	237	0	0	0	0	0
University of California San Diego	2,168	1,754	126	0	55	127	105
University of California San Francisco	2,104	1,905	138	0	18	43	0
University of California Santa Barbara	264	181	0	83	0	0	0
University of Southern California	324	273	0	0	0	50	0
Subtotal	34,689	29,224	1,368	466	409	643	2,080
Colorado							
Colorado State University	421	297	0	0	0	0	124
National Jewish Hospital & Res Ctr-Nat'l	134	0	0	0	0	0	134
National Jewish Hospital & Research	2,248	2,041	0	70	0	137	0
Syngene Products and Research	35	0	0	0	0	0	0
University of Colorado at Boulder	211	211	0	0	0	0	0
University of Colorado Health Science	1,238	1,042	0	0	0	197	0
Subtotal	4,288	3,591	0	70	0	334	258
Connecticut							
Optimal, Inc.	34	0	0	0	0	0	0
University of Connecticut Health Center	1,291	1,144	0	0	54	94	0
University of Connecticut Storrs	646	607	0	39	0	0	0
Wesleyan University	109	69	0	40	0	0	0
Yale University	5,558	4,924	0	1	76	415	143
Subtotal	7,639	6,744	0	80	130	509	143

NIAID Fiscal Year 1983 Grants—Geographical Distribution PART 1: DOMESTIC *continued*

State Institution	Total	Research Projects (R01, R21, R22, R23, R43, P01, U01)	Centers (P50)	Other Research (R13, R09, S06, K's)	Fellowships (F32, F33)	Training (T32, T35)	Contracts (N01, Y01)
District of Columbia							
Catholic University of America	77	77	0	0	0	0	0
Children's Hospital National Medical Center	135	135	0	0	0	0	0
George Washington University	366	366	0	0	0	0	0
Georgetown University	1,241	169	110	0	0	0	961
Howard University	122	122	0	0	0	0	0
U.S. Army Fort Detrick	50	0	0	0	0	0	50
U.S. Walter Reed Army Medical Center	16	0	0	0	0	0	16
Subtotal	2,006	868	110	0	0	0	1,027
Florida							
Florida Institute of Technology	130	82	0	0	0	0	47
Florida State University	96	96	0	0	0	0	0
University of Florida	1,068	919	0	39	18	93	0
University of Miami	527	527	0	0	0	0	0
University of South Florida	216	216	0	0	0	0	0
Subtotal	2,037	1,841	0	39	18	93	47
Georgia							
Emory University	1,804	1,804	0	0	0	0	0
Georgia Institute of Technology	37	0	0	37	0	0	0
Georgia Southern College	91	91	0	0	0	0	0
Morehouse College	77	77	0	0	0	0	0
University of Georgia	695	495	0	39	28	0	133
Subtotal	2,704	2,467	0	76	28	0	133
Hawaii							
Bernice P. Bishop Museum	93	93	0	0	0	0	0
Hawaii Biotechnology Group, Inc.	72	0	0	0	0	0	0
Kapiolani-Children's Medical Center	88	88	0	0	0	0	0
University of Hawaii at Manoa	405	405	0	0	0	0	0
Subtotal	657	585	0	0	0	0	0
Idaho							
University of Idaho	37	37	0	0	0	0	0
Subtotal	37	37	0	0	0	0	0
Illinois							
Howard Brown Memorial Clinic	522	0	0	0	0	0	522
Michael Reese Hospital & Medical Center	276	276	0	0	0	0	0
Northwestern University	1,816	1,360	351	0	0	105	0
Rush University	90	90	0	0	0	0	0
Southern Illinois University Carbon	79	79	0	0	0	0	0
University of Chicago	2,094	1,665	0	40	17	373	0
University of Health Sci/Chicago Medical	165	165	0	0	0	0	0
University of Illinois at Chicago	1,739	1,693	0	0	46	0	0
University of Illinois Urbana-Champaign	1,095	1,092	0	0	3	0	0
Subtotal	7,877	6,420	351	40	66	478	522
Indiana							
Ball State University	64	64	0	0	0	0	0
Indiana State University Terre Haute	86	86	0	0	0	0	0
Indiana Univ—Purdue Univ at Indiana	1,076	1,076	0	0	0	0	0
Indiana University Bloomington	363	320	0	43	0	0	0
Purdue University West Lafayette	564	564	0	0	0	0	0
University of Notre Dame	792	625	0	37	0	131	0
Subtotal	2,945	2,734	0	80	0	131	0
Iowa							
Iowa State University of Science &	103	103	0	0	0	0	0
Maharishi International University	76	76	0	0	0	0	0
University of Iowa	2,092	1,789	173	89	36	0	6
Subtotal	2,270	1,967	173	89	36	0	6
Kansas							
Kansas State University	82	82	0	0	0	0	0
University of Kansas Col Hlth Sci &	229	198	0	30	0	0	0
University of Kansas Lawrence	354	317	0	37	0	0	0
Subtotal	665	597	0	67	0	0	0

NIAID Fiscal Year 1983 Grants—Geographical Distribution PART 1: DOMESTIC *continued*

State Institution	Total	Research Projects (R01, R21, R22, R23, R43, P01, U01)	Centers (P50)	Other Research (R13, R09, S06, K's)	Fellowships (F32, F33)	Training (T32, T35)	Contracts (N01, Y01)
Kentucky							
University of Kentucky	492	492	0	0	0	0	0
University of Louisville	176	176	0	0	0	0	0
Subtotal	668	668	0	0	0	0	0
Louisiana							
Louisiana State Univ A&M Col Baton Rouge	130	130	0	0	0	0	0
Louisiana State Univ Med Ctr New Orleans	97	97	0	0	0	0	0
Louisiana State Univ Med Ctr Shreveport	49	49	0	0	0	0	0
Tulane University of Louisiana	1,603	1,345	0	32	19	30	177
U.S. PHS National Hansen's Disease	25	0	0	0	0	0	25
U.S. Veterans Admin Medical Ctr	41	41	0	0	0	0	0
Subtotal	1,947	1,663	0	32	19	30	202
Maine							
Jackson Laboratory	240	240	0	0	0	0	0
Subtotal	240	240	0	0	0	0	0
Maryland							
American Association of Immunologists	30	0	0	30	0	0	0
American Fdn for Bio Res Biomed Res	85	85	0	0	0	0	0
American Type Culture Collection	215	0	0	0	0	0	215
Federation of Amer Soc for Exper Bl	2	0	0	2	0	0	0
Johns Hopkins University	7,885	5,861	453	39	17	442	1,073
Litton Bionetics	100	0	0	0	0	0	100
U.S. Food and Drug Administration	228	0	0	0	0	0	228
U.S. National Institutes of Health	31	0	0	0	31	0	0
U.S. PHS Public Advisory Groups	628	0	0	628	0	0	0
U.S. Uniformed Services Univ of Hlt	626	626	0	0	0	0	0
University of Maryland at Baltimore	2,423	839	0	0	0	0	1,583
University of Maryland Balt Co Campus	62	62	0	0	0	0	0
Subtotal	12,316	7,474	453	699	48	442	3,200
Massachusetts							
Amherst College	39	39	0	0	0	0	0
Beth Israel Hospital	260	221	0	39	0	0	0
Biofusion, Inc.	103	0	0	0	0	0	0
Bolt Beranek and Newman	147	0	0	0	0	0	147
Boston City Hospital	619	619	0	0	0	0	0
Boston University	241	241	0	0	0	0	0
Brandeis University	632	555	0	35	0	42	0
Brigham and Women's Hospital	3,533	2,572	334	45	56	240	284
Center for Blood Research	97	97	0	0	0	0	0
Children's Hospital Medical Center	1,635	639	361	44	42	0	549
Dana-Farber Cancer Institute	1,846	1,596	0	0	96	0	155
Harvard Medical School	79	79	0	0	0	0	0
Harvard University	6,400	5,860	0	32	201	308	0
International Congress for Infect Dis	3	0	0	3	0	0	0
Massachusetts General Hospital	135	135	0	0	0	0	0
Massachusetts Institute of Technology	1,787	1,733	0	0	55	0	0
New England Deaconess Hospital	195	195	0	0	0	0	0
New England Medical Center Hospital	480	441	0	39	0	0	0
Smith College	51	51	0	0	0	0	0
Southeastern Massachusetts University	162	162	0	0	0	0	0
Tufts University	4,905	4,418	210	155	17	105	0
Tufts-New England Medical Center	73	73	0	0	0	0	0
University Hospital	149	149	0	0	0	0	0
University of Lowell	163	0	0	0	0	0	163
University of Massachusetts Amherst	486	419	0	0	0	67	0
University of Massachusetts Boston	169	169	0	0	0	0	0
University of Massachusetts Medical	1,251	1,251	0	0	0	0	0
Worcester Fdn for Exper Biology	182	182	0	0	0	0	0
Subtotal	25,821	21,894	906	391	466	762	1,298
Michigan							
Ann Arbor Nuclear, Inc.	52	0	0	0	0	0	0
Michigan Department of Public Health	160	0	0	0	0	0	160
Michigan State University	1,074	1,015	0	0	0	59	0

NIAID Fiscal Year 1983 Grants—Geographical Distribution PART 1: DOMESTIC *continued*

State Institution	Total	Research Projects (R01, R21, R22, R23, R43, P01, U01)	Centers (P50)	Other Research (R13, R09, S06, K's)	Fellowships (F32, F33)	Training (T32, T35)	Contracts (N01, Y01)
University of Michigan at Ann Arbor	2,718	2,406	0	40	17	0	255
Wayne State University	477	419	0	0	0	59	0
Subtotal	4,481	3,840	0	40	17	117	415
Minnesota							
Mayo Foundation	1,172	896	0	0	0	0	275
University of Minnesota at Duluth	190	190	0	0	0	0	0
University of Minnesota of Mnpls-St Paul	2,205	2,091	0	0	20	94	0
Subtotal	3,566	3,177	0	0	20	94	275
Mississippi							
University of Mississippi Medical Col	439	439	0	0	0	0	0
Subtotal	439	439	0	0	0	0	0
Missouri							
Jewish Hospital of St. Louis	1,022	984	0	38	0	0	0
Midwest Organ Bank	9	0	0	0	0	0	9
St. Louis University	257	228	0	29	0	0	0
University of Missouri Columbia	561	523	0	39	0	0	0
Washington University	4,752	3,956	327	35	37	397	0
Subtotal	6,601	5,690	327	141	37	397	9
Montana							
Columbus Hospital	142	142	0	0	0	0	0
Montana State University	230	194	0	36	0	0	0
Subtotal	372	336	0	36	0	0	0
Nebraska							
University of Nebraska Lincoln	191	154	0	37	0	0	0
University of Nebraska Medical Center	195	195	0	0	0	0	0
Subtotal	387	350	0	37	0	0	0
Nevada							
University of Nevada Reno	50	50	0	0	0	0	0
Subtotal	50	50	0	0	0	0	0
New Hampshire							
Dartmouth College	747	729	0	0	18	0	0
Subtotal	747	729	0	0	18	0	0
New Jersey							
American Cyanamid Company	114	0	0	0	0	0	114
Institute for Medical Research	106	106	0	0	0	0	0
Princeton University	132	91	0	41	0	0	0
Rutgers Medical School	374	374	0	0	0	0	0
Rutgers The State Univ New Brunswick	577	554	0	3	19	0	0
Subtotal	1,302	1,126	0	44	19	0	114
New Mexico							
New Mexico State University Las Cruces	148	114	0	35	0	0	0
University of New Mexico Albuquerque	108	77	0	31	0	0	0
Subtotal	256	191	0	65	0	0	0
New York							
Associated Univ-Brookhaven Natl Lab	115	115	0	0	0	0	0
Bionique Laboratories, Inc.	56	0	0	0	0	0	0
Children's Hospital	127	127	0	0	0	0	0
Cold Spring Harbor Laboratory	419	385	0	0	34	0	0
College of Environmental Sci & Fore	106	106	0	0	0	0	0
Columbia University	3,668	3,267	0	41	17	228	115
Cornell University Ithaca	1,798	1,586	0	0	18	0	193
Cornell University Medical Center	1,398	1,343	0	0	39	16	0
Downstate Medical Center	677	460	0	0	0	0	217
Hospital for Joint Diseases Ortho I	193	193	0	0	0	0	0
Mary Imogene Bassett Hospital	69	69	0	0	0	0	0
Mount Sinai School of Medicine	795	795	0	0	0	0	0
New York Blood Center	130	130	0	0	0	0	0
New York State Department of Health	588	588	0	0	0	0	0
New York University	2,881	2,483	0	33	18	101	247

NIAID Fiscal Year 1983 Grants—Geographical Distribution PART 1: DOMESTIC *continued*

State Institution	Total	Research Projects (R01, R21, R22, R23, R43, P01, U01)	Centers (P50)	Other Research (R13, R09, S06, K's)	Fellowships (F32, F33)	Training (T32, T35)	Contracts (N01, Y01)
Pace University New York	79	79	0	0	0	0	0
Public Hlth Res Inst of the City of	496	496	0	0	0	0	0
Rockefelier University	4,087	3,501	372	0	36	177	0
Roswell Park Memorial Institute	222	222	0	0	0	0	0
Sloan-Kettering Institute for Cancer	1,609	1,228	0	39	18	0	324
St. Luke's-Roosevelt Inst for Health	274	0	0	0	0	0	0
St. Vincent's Hosp & Med Ctr New York	117	0	0	0	0	0	0
State University New York Stony Brook	1,031	770	190	40	32	0	0
State University of New York at Albany	214	196	0	0	18	0	0
State University of New York at Buffalo	850	810	0	40	0	0	0
Syracuse University at Syracuse	48	48	0	0	0	0	0
Trudeau Institute	455	455	0	0	0	0	0
University of Rochester	2,561	1,534	0	72	0	130	825
University of the State of New York	49	49	0	0	0	0	0
Upstate Medical Center	304	304	0	0	0	0	0
Vassar College	67	67	0	0	0	0	0
W. Alton Jones Cell Science Center	152	152	0	0	0	0	0
Yeshiva University	3,815	3,031	0	0	0	137	0
Subtotal	29,452	24,590	562	264	230	789	1,922
North Carolina							
Duke University	2,783	2,123	142	39	0	479	0
East Carolina University	81	81	0	0	0	0	0
North Carolina State University Raleigh	75	75	0	0	0	0	0
University of North Carolina Chapel Hill	1,913	1,752	0	0	18	143	0
Wake Forest University	1,015	1,015	0	0	0	0	0
Subtotal	5,867	5,046	142	39	18	622	0
Ohio							
Bowling Green State Univ Bowling Green	84	47	0	38	0	0	0
Case Western Reserve University	1,484	1,438	0	0	0	46	0
Central State University	3	0	0	3	0	0	0
Christ Hospital	277	277	0	0	0	0	0
Cleveland Clinic Foundation	229	229	0	0	0	0	0
Deaconess Hospital	88	88	0	0	0	0	0
Medical College of Ohio at Toledo	212	171	0	41	0	0	0
Ohio State University	538	535	0	3	0	0	0
Ohio University Athens	34	34	0	0	0	0	0
University Hospitals of Cleveland	19	0	0	0	19	0	0
University of Cincinnati	1,153	1,153	0	0	0	0	0
University of Toledo	33	33	0	0	0	0	0
Wright State University	97	97	0	0	0	0	0
Subtotal	4,252	4,102	0	85	19	46	0
Oklahoma							
Oklahoma Medical Research Foundation	257	257	0	0	0	0	0
Oklahoma State University Stillwater	176	137	0	40	0	0	0
Oral Roberts University	48	48	0	0	0	0	0
University of Oklahoma Hlth Science	78	78	0	0	0	0	0
University of Oklahoma Norman	210	210	0	0	0	0	0
Subtotal	769	729	0	40	0	0	0
Oregon							
Medical Research Foundation of Oregon	164	164	0	0	0	0	0
Oregon Graduate Ctr Study and Research	96	96	0	0	0	0	0
Oregon Health Sciences University	700	700	0	0	0	0	0
Oregon State University	373	373	0	0	0	0	0
Reed College	74	74	0	0	0	0	0
University of Oregon	105	87	0	0	18	0	0
Subtotal	1,513	1,494	0	0	18	0	0
Pennsylvania							
Academy of Natural Sciences	128	128	0	0	0	0	0
Children's Hospital of Philadelphia	242	214	0	5	23	0	0
Children's Hospital of Pittsburgh	90	90	0	0	0	0	0
Hahnemann University	474	441	0	33	0	0	0
Institute for Cancer Research	1,134	1,134	0	0	0	0	0
Medical College of Pennsylvania	98	98	0	0	0	0	0
Pennsylvania State University	238	238	0	0	0	0	0

NIAID Fiscal Year 1983 Grants—Geographical Distribution PART 1: DOMESTIC *continued*

State Institution	Total	Research Projects (R01, R21, R22, R23, R43, P01, U01)	Centers (P50)	Other Research (R13, R09, S06, K's)	Fellowships (F32, F33)	Training (T32, T35)	Contracts (N01, Y01)
St. Joseph's Hospital	53	53	0	0	0	0	0
Temple University	959	688	0	0	0	104	166
Thomas Jefferson University	369	369	0	0	0	0	0
University of Pennsylvania	3,049	3,015	0	34	0	0	0
University of Pittsburgh	2,151	1,384	0	40	0	0	727
Wistar Institute of Anatomy and Biology	1,839	1,821	0	0	18	0	0
Subtotal	10,823	9,674	0	112	40	104	893
Rhode Island							
Brown University	235	235	0	0	0	0	0
Gordon Research Conferences	23	0	0	23	0	0	0
Rhode Island Department of Health	74	74	0	0	0	0	0
University of Rhode Island	129	123	0	6	0	0	0
Subtotal	461	432	0	29	0	0	0
South Carolina							
Medical University of South Carolina	524	506	0	0	18	0	0
University of South Carolina at Col	82	82	0	0	0	0	0
Subtotal	606	588	0	0	18	0	0
South Dakota							
University of South Dakota	54	54	0	0	0	0	0
Subtotal	54	54	0	0	0	0	0
Tennessee							
Meharry Medical College	297	297	0	0	0	0	0
Memphis State University	40	40	0	0	0	0	0
St. Jude Children's Research Hospital	1,083	826	0	2	0	0	168
University of Tenn Center Health Sc	597	466	0	0	0	130	0
University of Tennessee Knoxville	372	370	0	2	0	0	0
Vanderbilt University	1,391	990	0	0	21	0	380
Subtotal	3,779	2,988	0	4	21	130	548
Texas							
Baylor College of Medicine	2,779	1,354	0	155	0	0	1,270
North Texas State University	139	139	0	0	0	0	0
Rice University	102	102	0	0	0	0	0
San Antonio State Chest Hospital	193	193	0	0	0	0	0
Southern Methodist University	66	66	0	0	0	0	0
Texas Agri and Mech Univ College St	411	411	0	0	0	0	0
Texas Tech University	62	62	0	0	0	0	0
University of Texas Arlington	45	45	0	0	0	0	0
University of Texas Austin	845	845	0	0	0	0	0
University of Texas Dallas	212	212	0	0	0	0	0
University of Texas Hlth Sci Ctr Dallas	3,138	2,801	337	0	0	0	0
University of Texas Hlth Sci Ctr Houston	545	510	0	0	0	35	0
University of Texas Hlth Sci Ctr San Ant	750	686	0	41	23	0	0
University of Texas Med Br Galveston	426	426	0	0	0	0	0
University of Texas San Antonio	153	95	0	59	0	0	0
Subtotal	9,865	7,946	337	254	23	35	1,270
Utah							
Brigham Young University	135	135	0	0	0	0	0
LDS Hospital	73	73	0	0	0	0	0
University of Utah	1,751	1,512	0	0	37	0	202
Utah State University	137	137	0	0	0	0	0
Subtotal	2,096	1,857	0	0	37	0	202
Vermont							
University of Vermont & St Agric Col	558	558	0	0	0	0	0
Subtotal	558	558	0	0	0	0	0
Virginia							
Meloy Laboratories	472	0	0	0	0	0	472
Old Dominion University	40	40	0	0	0	0	0
University of Virginia Charlottesville	1,182	987	0	49	18	129	0
Virginia Commonwealth University	971	948	0	0	23	0	0
Virginia Polytechnic Inst and St Univ	303	303	0	0	0	0	0
Subtotal	2,969	2,278	0	49	40	129	472

NIAID Fiscal Year 1983 Grants—Geographical Distribution PART 1: DOMESTIC *continued*

State Institution	Total	Research Projects (R01, R21, R22, R23, R43, P01, U01)	Centers (P50)	Other Research (R13, R09, S06, K's)	Fellowships (F32, F33)	Training (T32, T35)	Contracts (N01, Y01)
Washington							
Children's Orthopedic Hospital-Med	389	382	0	0	6	0	0
Eastern Washington University	53	53	0	0	0	0	0
Fred Hutchinson Cancer Research Center	281	242	0	40	0	0	0
Genetic Systems Corporation	183	110	0	0	0	0	0
Issaquah Health Research Institute	289	289	0	0	0	0	0
University of Washington	3,416	2,841	0	117	38	292	127
Washington State University	265	265	0	0	0	0	0
Subtotal	4,876	4,182	0	157	44	292	127
West Virginia							
Marshall University	395	51	0	0	0	0	344
Subtotal	395	51	0	0	0	0	344
Wisconsin							
Blood Center of Southeastern Wisconsin	141	141	0	0	0	0	0
Marquette University	42	42	0	0	0	0	0
Medical College of Wisconsin	836	368	262	0	0	0	206
University of Wisconsin Madison	3,135	2,806	235	77	17	0	0
Subtotal	4,154	3,357	497	77	17	0	206
Wyoming							
University of Wyoming	52	52	0	0	0	0	0
Subtotal	52	52	0	0	0	0	0
Total	213,622	177,744	5,225	3,773	1,857	6,498	16,475

NIAID FY 1983 Grants—Geographical Distribution PART 2: FOREIGN

Dollars in thousands

State Institution	Total	Research Projects (R01, R21, R22, R23, R43, P01, U01)	Centers (P50)	Other Research (R13, R09, S06, K's)	Fellowships (F32, F33)	Training (T32, T35)	Contracts (N01, Y01)
Australia							
Australian National University	93	93	0	0	0	0	0
Royal Melbourne Hospital	60	60	0	0	0	0	0
Walter and Eliza Hall Inst Medical	238	238	0	0	0	0	0
Subtotal	391	391	0	0	0	0	0
Canada							
Montreal General Hospital	90	90	0	0	0	0	0
University of Manitoba	102	102	0	0	0	0	0
Subtotal	192	192	0	0	0	0	0
Finland							
Central Public Health Laboratory	27	0	0	0	0	0	27
Subtotal	27	0	0	0	0	0	27
France							
Pasteur Institute	21	0	0	0	21	0	0
University of Paris VII	31	31	0	0	0	0	0
Subtotal	53	31	0	0	21	0	0
Israel							
Hadassah University Hospital	77	77	0	0	0	0	0
Hebrew University of Jerusalem	38	38	0	0	0	0	0
Technion-Israel Institute of Technology	32	32	0	0	0	0	0
Weizmann Institute of Science	46	46	0	0	0	0	0
Subtotal	193	193	0	0	0	0	0

NIAID Fiscal Year 1983 Grants—Geographical Distribution PART 2: FOREIGN *continued*

State Institution		Total	Research Projects (R01, R21, R22 R23, R43, P01, U01)	Centers (P50)	Other Research (R13, R09, S06, K's)	Fellowships (F32, F33)	Training (T32, T35)	Contracts (N01, Y01)
Switzerland								
University of Zurich		34	34	0	0	0	0	0
	Subtotal	34	34	0	0	0	0	0
United Kingdom								
Medical Research Council		3	0	0	0	3	0	0
University of Cambridge		33	0	0	0	33	0	0
University of London		37	37	0	0	0	0	0
	Subtotal	73	37	0	0	36	0	0
	Total	963	878	0	0	58	0	27
	Total NIAID FY83	**214,584**	**178,622**	**5,225**	**3,773**	**1,915**	**6,498**	**16,503**

NIH Awards by State and Funding Mechanism
Fiscal Year 1982

Dollars in thousands

State	Total	Institutes and Research Divisions									NLM awards
		Research and development					Research training			Construction grants	
		Grants				Contracts	Total	Indiv. awards	Inst'l grants		
		Total	Projects*	Centers	Other*						
Total	**$2,930,054†**	**$2,382,308**	**$1,834,432**	**$347,562**	**$200,313**	**$349,760**	**$155,402**	**$31,196**	**$124,206**	**$6,225**	**$15,015**
U.S. total	**2,906,153†**	**2,368,972**	**1,822,214**	**347,562**	**199,196**	**340,276**	**154,371**	**30,371**	**124,206**	**6,225**	**14,966**
Alabama	42,688	32,805	18,005	8,800	6,000	7,810	2,069	248	1,821	—	4
Alaska	193	193	93	—	99	—	—	—	—	—	—
Arizona	17,273	15,604	12,542	1,958	1,104	1,125	544	168	376	—	—
Arkansas	2,334	2,264	1,833	—	431	—	38	38	—	—	32
California	409,532†	345,518	281,179	42,835	21,504	34,637	23,787	5,840	17,946	1,128	1,447
Colorado	35,023	31,120	26,150	2,892	2,077	1,143	2,760	586	2,174	—	—
Connecticut	84,207†	72,468	63,989	5,460	3,019	4,666	6,883	1,305	5,577	—	—
Delaware	1,807	1,717	1,309	—	408	90	—	—	—	—	—
Dist. of Col.	36,893†	20,452	13,088	2,657	4,706	14,082	1,023	145	878	—	746
Florida	41,558†	34,964	27,132	3,264	4,568	4,283	1,390	156	1,233	449	265
Georgia	32,398	28,234	18,100	5,569	4,565	2,487	1,264	237	1,027	347	66
Hawaii	7,069	5,481	3,785	605	1,092	1,449	139	64	75	—	—
Idaho	523	434	337	—	96	69	17	17	—	—	4
Illinois	106,144†	89,070	68,618	12,093	8,359	7,288	6,828	865	5,963	360	586
Indiana	28,306†	25,829	21,231	2,262	2,335	939	1,487	156	1,330	—	7
Iowa	30,089†	24,925	18,246	4,316	2,363	3,208	1,679	321	1,359	—	178
Kansas	11,637†	10,698	9,042	564	1,091	358	513	17	496	—	—
Kentucky	8,604†	7,651	6,590	—	1,061	248	101	13	88	—	27
Louisiana	23,029	18,603	10,401	5,810	2,391	3,649	777	69	708	—	—
Maine	6,311	5,990	5,456	339	195	52	121	—	121	—	147
Maryland	177,690†	73,875	56,536	12,174	5,164	91,619	7,464	2,250	5,214	292	3,602
Massachusetts	303,608	249,664	204,384	31,280	14,001	31,553	17,921	4,274	13,646	612	1,876
Michigan	75,658†	61,542	49,279	7,588	4,674	8,915	3,870	645	3,225	689	42
Minnesota	75,524†	62,733	45,886	7,243	9,604	8,500	3,603	679	2,924	—	161
Mississippi	7,321	6,639	4,690	—	1,949	253	429	74	355	—	—
Missouri	68,956	54,745	41,087	8,346	5,312	9,052	4,760	681	4,079	205	195
Montana	1,060	949	828	—	121	—	—	—	—	—	110
Nebraska	6,039	5,093	4,407	—	686	593	74	35	39	—	279
Nevada	512	512	454	—	58	—	—	—	—	—	—
New Hampshire	8,607†	7,961	6,285	1,047	629	—	307	51	256	—	11
New Jersey	23,056	18,445	16,001	885	1,559	2,749	1,349	242	1,106	—	513
New Mexico	8,555	7,250	4,281	1,135	1,834	1,028	210	6	204	—	67
New York	400,002†	357,005	276,813	55,545	22,647	16,618	20,288	3,773	16,515	1,565	781
North Carolina	91,964†	75,270	53,490	15,130	6,644	8,330	7,517	1,147	6,370	219	460
North Dakota	757	757	670	—	87	—	—	—	—	—	—
Ohio	77,291†	61,888	47,156	10,210	4,522	11,466	2,783	303	2,480	—	360
Oklahoma	8,518	6,999	6,198	—	802	1,430	88	22	66	—	—
Oregon	27,016†	24,908	16,944	6,190	1,774	496	1,234	306	928	—	17
Pennsylvania	171,937†	152,925	117,202	24,323	11,400	8,970	7,667	1,184	6,483	—	639
Rhode Island	11,833†	10,678	7,677	1,494	1,507	310	545	59	486	—	—
South Carolina	10,857	9,954	7,152	1,375	1,427	494	408	73	335	—	—
South Dakota	250	250	192	—	58	—	—	—	—	—	—
Tennessee	49,919†	45,146	26,562	13,191	5,394	1,535	3,186	239	2,946	—	—
Texas	141,827†	121,680	91,749	16,679	13,252	13,834	5,774	1,475	4,298	—	91
Utah	24,001	18,833	16,346	977	1,510	4,083	944	175	769	—	141
Vermont	10,148†	9,409	5,700	3,147	561	247	355	145	210	—	—
Virginia	51,706	31,239	22,725	3,894	4,619	16,426	3,045	353	2,692	—	996
Washington	80,186†	64,946	45,521	15,328	4,097	7,969	5,275	1,091	4,184	220	520
West Virginia	2,559	1,961	1,740	—	221	387	205	62	143	—	5
Wisconsin	58,418†	48,046	34,308	9,907	3,830	5,706	3,238	440	2,798	139	389
Wyoming	709	594	527	—	67	—	—	—	—	—	115
Puerto Rico	4,054	3,055	287	1,048	1,720	131	417	138	279	—	—
Foreign‡	23,901	13,336	12,219	—	1,117	9,484	1,031	1,031	—	—	49

*Includes cooperative agreements.
†Cancer control grants are shown in totals only.
‡Awards to U.S. citizens as well as to foreign nationals.

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